VOL. 177 No. 1 JULY, 1952

AMERICAN Gas Journal

JUL 28 1952

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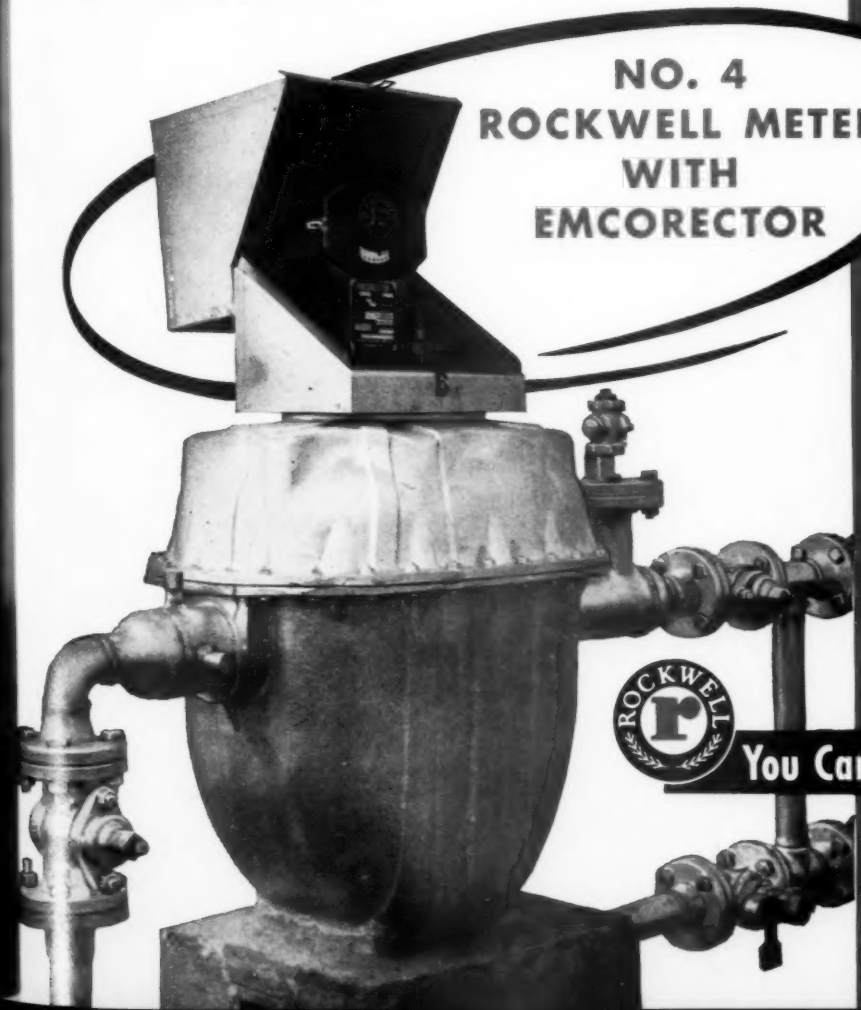

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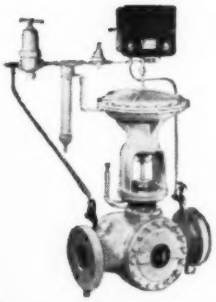
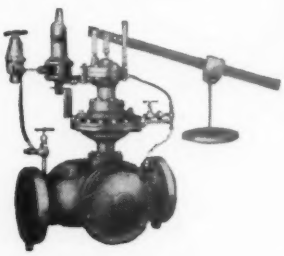


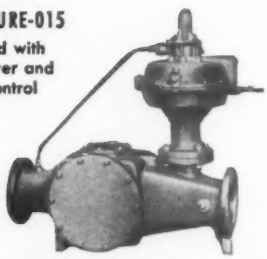
HIGH PRESSURE-015
Instrument Control

HIGH PRESSURE-015
Lever and Weight Type

HIGH PRESSURE-015
Spring Loaded



HIGH PRESSURE-015
Pilot Loaded with Auxiliary Lever and Weight Control



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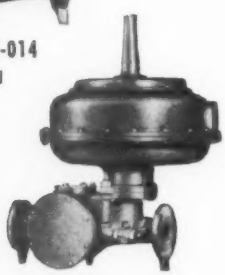

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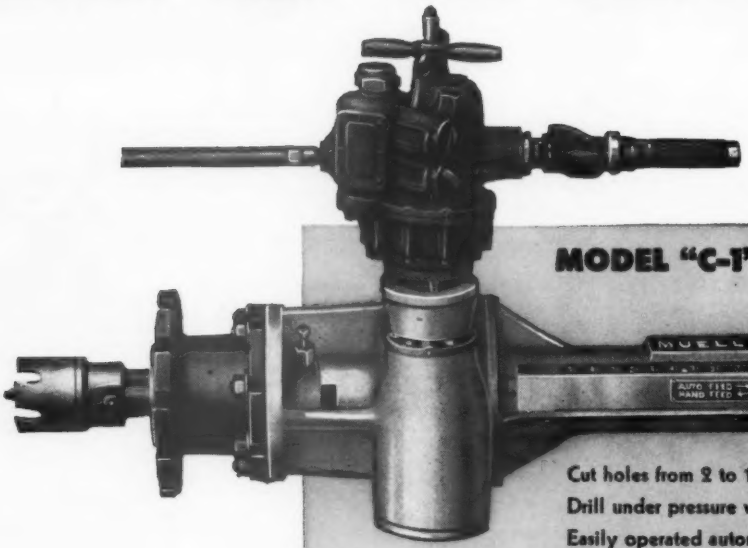

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AMERICAN Gas Journal
ESTABLISHED 1859

VOLUME 177 JULY 1952 NUMBER 1

This month...

We strongly recommend to the publicity writers who keep us comfortably confused with the wealth of press releases that roll in on ever incoming mail, that they read a little pamphlet "How to Get Publicity for New Industrial Products," which is free for the asking, from New Equipment Digest, 1213 West Third Street, Cleveland 13, Ohio. Set down in this little work is a set of 14 rules, Do's and Don't's that every aspirant for free space for his product would do well to learn by heart.

Legitimate press releases can and should be presented without apology, with their news value to the industry as the only criterion by which they are to be judged. Somewhere along the line we suspect that this standard often gives way to "what the boss would like to see in print," as the substitute yardstick.

• • •

Hoping to forestall a few letters before they are written let us announce that the 1951 edition of "American Gas Handbook" is long since exhausted. It is All, as we say in our native Pennsylvania Dutch. The 1952 Handbook, with many new features, is well along in preparation, and scheduled for distribution to all paid subscribers to AMERICAN GAS JOURNAL late in August.

• • •

AMERICAN GAS JOURNAL is now being mailed without envelope or wrapper. It's an experiment. It saves a little time and quite a bit of money. We would like to know however if any copies arrive in poor condition for reading and filing. We will replace them; and if there are too many we will give up the whole idea and go back to wrappers.

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Elliott Taylor · Editor

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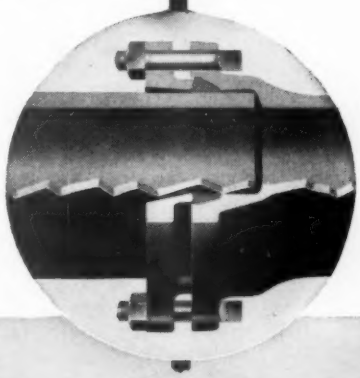

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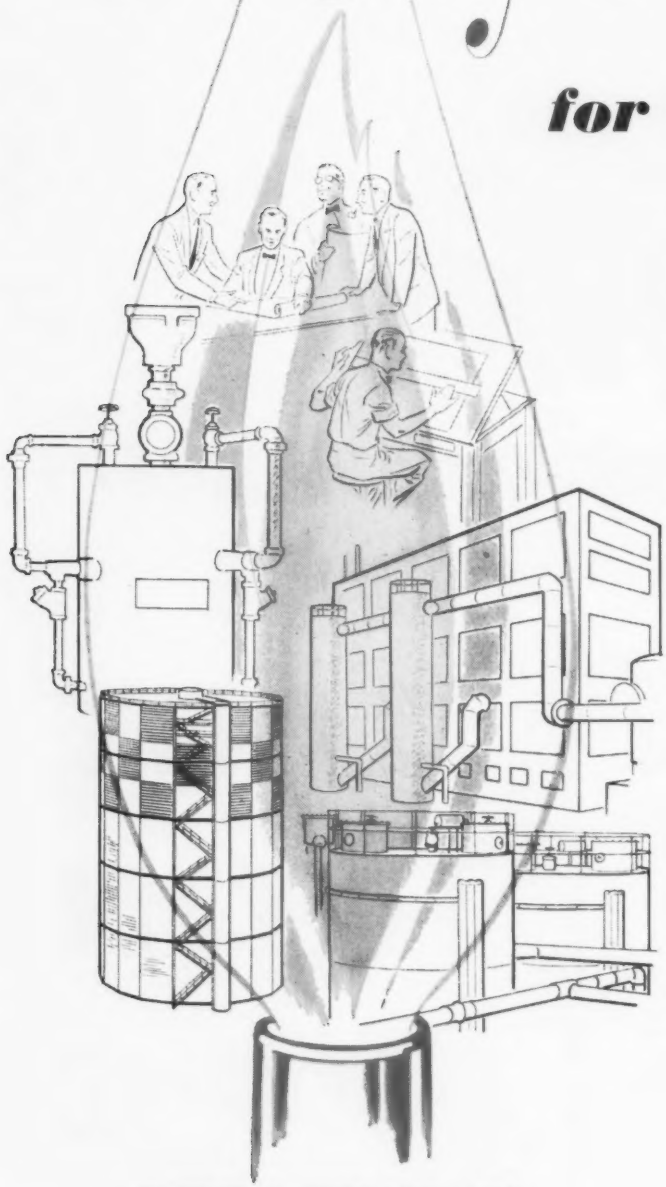

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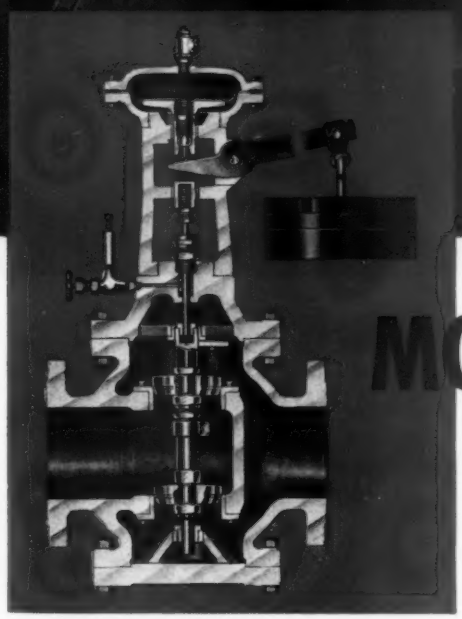

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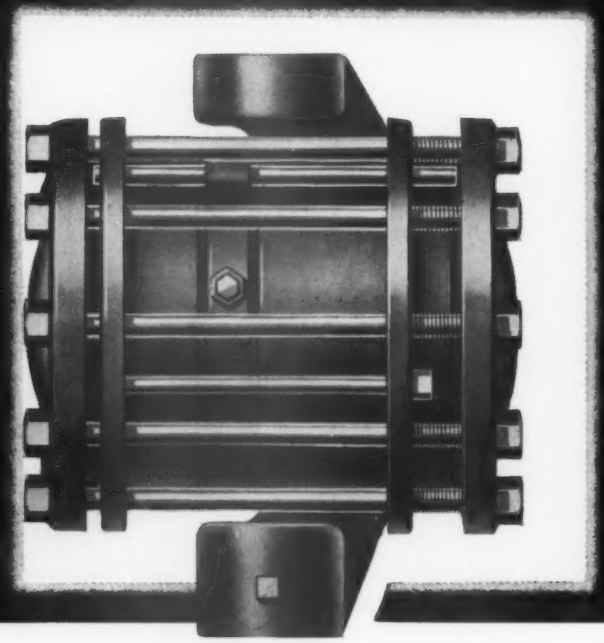

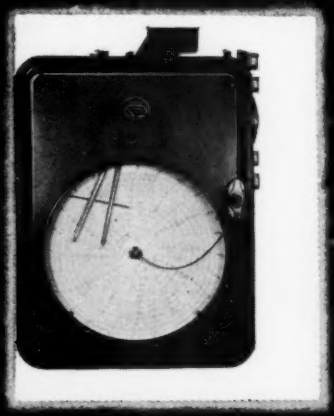

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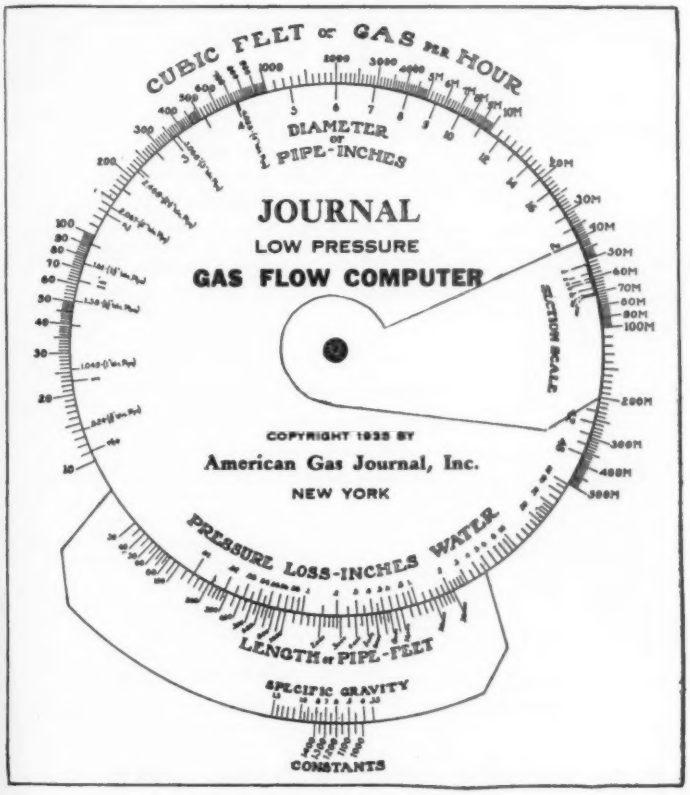

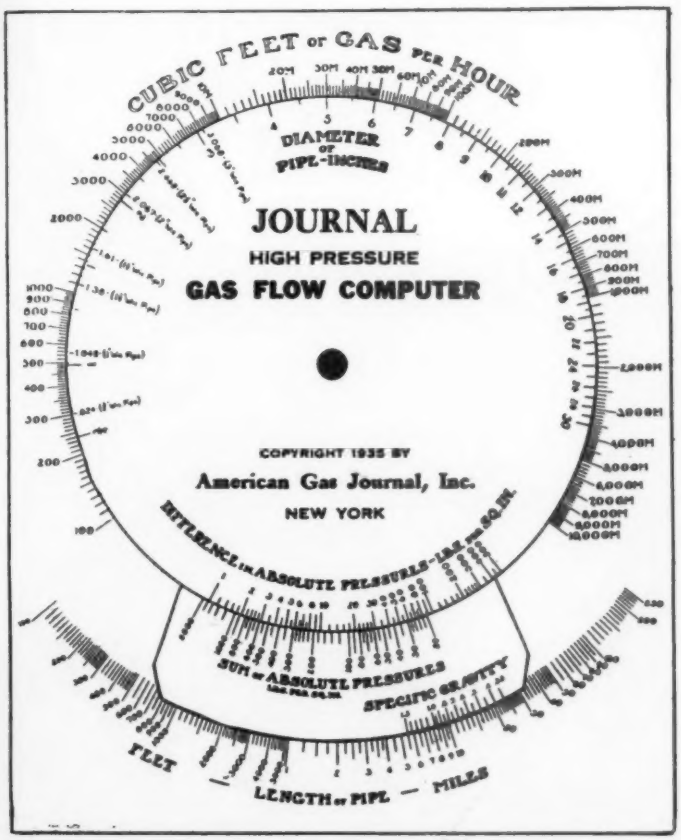

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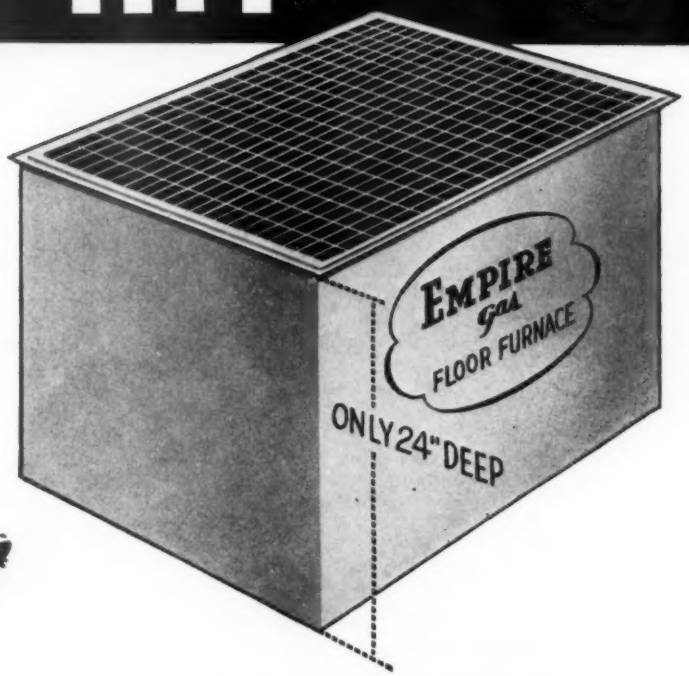

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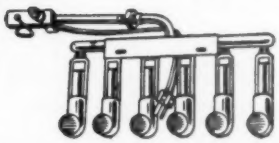

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Editorial:

Texas Tempest

AS graduates of the old school of business philosophy which taught that all competitors are a parcel of prevaricators at heart, we sometimes find it hard to view with the proper degree of sustained amazement the outrageous claims of superiority made by the champions of electric cookery.

That they don't put too fine an interpretation on the shades of distinction between outright untruth and misleading innuendo is granted. To hear them tell it, a ten pound standing rib roast shrinks to something resembling the bleached bones found around a dried-up water hole if it is cooked in what they pityingly describe as a flame type oven. The kitchen in which a gas range is used, early takes on the dark patina of a railroad roundhouse roof as the boiling clouds of soot and fumes roll up from the flaming inferno over which the haggard housewife stand sweating away her physical charms along with the best years of her life. And the little Katzenjammers in the family slyly await their chance to turn on all the top burners so they can rush out into the back yard and watch the house go boom.

Understandably, this sort of propaganda makes irritating reading for the dyed-in-the-wool gas man. Recently it got under the hide of the Lone Star Gas Company management to the extent that the company sent out a letter to 250 editors of Texas newspapers hoping to spark the electric industry to confine itself to fair claims in its press releases. Lone Star urges every other gas utility in the country to adopt the same attitude and to challenge every misstatement every time that one appears in print.

This is all to the good as far as it goes. We believe every gas man should stand up and fight like a she-bear over a cub every time any claim, fair or unfair is made in derogation of his product. This may make cultural chameleons out of the public relations directors of some of the combination gas and electric companies, but that is an occupational hazard to which press agents have long since become inured.

Even though we do applaud the fighting spirit of Lone Star, and of other utilities that have risen in vigorous protest against similar calumnies, we are mindful of the fact that the battle of the kitchen fuels is not going to be won by rear-guard action. It is an axiom in the publishing business that once a statement has been printed no amount of retraction can ever fully overcome its effect.

If electricity is outpointing gas in the fight for customer preference, it is not because of any particular weight that is attached to the random untruths in which its practitioners sometimes deal, but rather by the credence that finally follows any claims, true or false, that are unremittingly drummed into the public consciousness.

There is no avenue of publicity employed by the electrical industry that isn't wide open to the gas industry as well. There is no secret formula or superior cunning that is the exclusive property of electrical propagandists. It isn't the way we were taught to believe in Sunday School, but if the gas industry could advance, right now, claims that would make the competition howl with indignation and rush to the editors of their newspapers, we would say our side had won a round.

There is at present a strong movement on foot, and sponsored by leaders in both utility and appliance manufacturer circles, to bring the two groups together into a united front for a vigorous, objective and intelligently administered public relations and publicity policy. When and if that nebulous dream is ever drawn up into a concrete program, and implemented with the necessary funds to put it across, we believe the whole complexion of the competitive situation will change, rapidly and to the benefit of the gas industry and its dependent appliance manufacturers.

In the meantime it is a good thing to see a company like Lone Star come out of its corner and wade in there fighting. Lone Star can't win the fight alone, and it may not take every round; but you can lay odds that it will never toss in the towel. And by example it is pointing the way toward one form of action which might well become part of a unified pattern of gas industry public relations.

Elliott Taylor

How Appliance Operation and Servicing are Affected by Varying Gas Conditions

by Walter C. Peters
Northern States Power Co.

Adapted from a presentation to American Gas Association Distribution, Motor Vehicles and Corrosion Conference

Gas appliance servicing operations are affected in varying degrees by changes in the properties of the gas distributed, its purity, the constancy in pressure control, and the gas conditioning practices followed in the distribution system of a gas utility.

In the gas utility business we are fundamentally concerned with three things: a gas supply, a means of distribution, the means of consumption and utilization.

One of the measures of success in our business is factor three, the utilization of gas and how effectively and profitably we are able to dispose of our product. The customer's utilization of gas in his appliances, necessary for this situation, depends on quite a few factors that must be met *before* the gas is delivered to the customer.

A customer service department can make adjustments and take corrective action only according to the dictates of what is coming through the gas supply lines. Any varying gas conditions beyond the flexibility in operation of a gas appliance may result in dissatisfaction on the part of the customer, additional servicing of the appliance, or both.

Character of gas supply

Where a single gas is distributed, it must have uniformity in gravity, heating value and burning characteristics. Where various gases are blended, the control of the mixtures must be such that a satisfactory balance of characteristics will provide a usable gas for all appliances under all conditions. Considerable laboratory and field work has been done by the American Gas Association and several of the gas utilities in determining the interchangeability of gases.

Whenever the limits of supplemental gas or adjustment gases are violated, increased service calls on gas appliances are the result. Lifting of flames, flashbacks, yellow-tipped flames, pilot outages and other troubles are the common items.

In the use of liquefied petroleum gases and air, mixtures must be controlled to maintain a quality within the limits of safe and proper operation.

Natural gas should not vary in analysis, from one field or group of fields, to the extent that appliance operation would be appreciably affected.

In manufactured gas the undesirable naphthalene, gums, sulphur compounds, tar and oil vapors, and excessive water vapor must be removed. Purification of gases to a degree necessary for use in automatic appliances today cannot receive casual or intermittent attention.

Pilots, pilot controls and thermostats need a clean gas that will keep these parts operative. Even with filters on every appliance, no serviceman can insure the continuous and dependable operation of an appliance if the gas as put into the distribution system contains "gremlins" that undo or destroy his work after him.

Natural gas is in a more favored class and if oil scrubbers are utilized at the points of delivery from the pipe lines, the original product is reasonably free from undesirable entrained material.

Distribution

In transporting the gas to the points of consumption, we encounter a number of factors which may add or detract from appliance servicing operations. Perhaps the most important of these is pressure control.

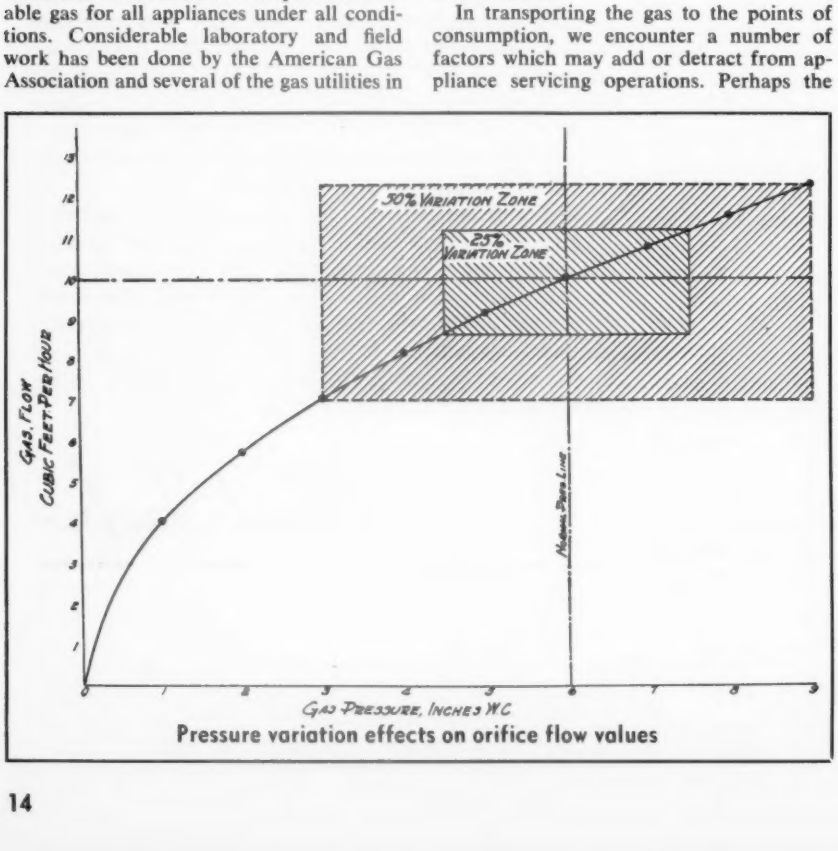
In Low Pressure grid networks supplied by a district regulator, excessive pressure fluctuations are detrimental to gas safety and trouble-free appliance operation. There was a time when a 50% pressure variation up or down, from normal operating pressures, was considered satisfactory distribution practice.

Today there are few gas appliances that do not have automatic controls of some sort. Many depend on a safety pilot to keep them in operation. For proper operation, burners should be supplied at the rated input. With a six inch W.C. pressure variation, heat input would vary approximately 30% on the down side, and 23% on the up side, both for burners and pilots.

Such variations are not good pressure control. High flames, pilot outs or low burners, all are common service calls caused by pressure variations.

System design engineers today must recognize the need for closer pressure control and set their gas computers accordingly. We submit a figure of 25% maximum pressure variation, up or down, from normal pressure, as a suggested design standard.

The pressure control problem is eliminated for the greater part where medium or high pressure systems supply the customer through service regulators, leaving only meter and house line pressure drops to affect the appliance. It is likewise eliminated where appliance regulators are employed to provide controlled pressure and thereby constant flow to appliance burners and their pilots.



Pressure variation effects on orifice flow values

Gas conditioning

A gas factor that has moved up in importance, particularly with the expansion of natural gas, is gas conditioning. While the manufactured gas utilities may have the problem of dehydration during the winter season to keep services and meters from freezing, things are apt to be too dry with the natural gas utilities. Even if we leave the dried out pipe joints, dust bowls, and other distribution headaches with the distribution people, there are some of their problems that can blow right into the field of the customer service departments. Deposits in mains, unless held down, move along with increased gas velocities to stop off pilots and controls. Oil fogging and humidification can be helpful in retarding the movement of foreign materials to a rate that they will not cause an appreciable number of service calls. However, control of gas conditioning is vital, or we find oil fog condensing in reg-

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House Heating Service by Utility Assures Customer Satisfaction and Fuel Position

by W. W. Gilliss, Jr.
Superintendent of Service
Washington Gas Light Company

WHETHER a gas utility renders house heating service or not is a decision which can be reached only after considering many factors. Some of the factors that enter into such consideration relate to gas sales, promotional activities, customer relations work, gas rates and the position the utility enjoys in its community.

One of the best methods to assure customer satisfaction, efficient and safe operation, and a continued satisfactory position in competition with other fuels, is for the utility to supply service.

The quality of the service should be so good that it becomes one of the factors upon which the reputation of the utility is based. Service of appliances is essential as a follow-up of sales and promotional work. The quality of the service can mean the difference between *having satisfied customers or losing business to competitors*. Many utilities are judged by the customer on the quality of service rendered, and the customer's impressions are based on his contact with the utility's servicemen.

Often, outside agencies render excellent service and augment the work done by the utilities in promoting the use of gas. Where agencies exist, it is well to help and encourage them so that their servicemen provide customers with adequate service on their appliances.

There are several methods which have been found to be helpful in promoting properly-sized and -installed heating equipment. It is fundamental to all methods that proper standards be developed and adopted. These standards or requirements should be set forth clearly in codes, regulations or specifications to insure safe and satisfactory heating installations.

Utilities develop own standards

Many utilities have developed their own standards to assure that properly-sized, approved types of equipment, and proper installations are made; others have used the standards which are sponsored by the American Gas Association, the National Board of Fire Underwriters and other organizations. Many municipalities include in their overall building codes, specific plumbing codes or gas fitting codes with minimum standards which must be met. There are other sources of information, data and specifications which are readily available from equipment manufacturers, utilities or others. Codes or standards are constantly in need of revisions and additions to provide for new developments in equipment and construction, new uses for gas, and other factors which make them out of date.

Practices vary widely in enforcing or determining that the heating installations comply with the standards adopted, whether those standards are sponsored by the utility or municipality. In certain instances installation permits are required and will only be issued after a verification that the equipment proposed is of an approved make and the installation will be adequate and made properly by a qualified person.

More often the inspection divisions such as the plumbing office rely on field inspections and will only approve the supplying of gas to installations which comply with the standards. The utility representative, too, will determine that the installation is safe before installing the gas meter or supplying gas to the house heater.

All this inspecting is done after the installation is made, but what is more desirable from everyone's viewpoint is to see that the job is planned and designed properly to avoid the need for making corrections later.

Engineering service is effective

Toward this end, one of the most effective utility methods is to offer a house heating engineering service. Such an engineering service usually includes making heat loss calculations to determine the proper size equipment. The utility sometimes prepares estimates of the heating bills for the purchaser.

The utility can do much to promote the use of codes, standards and specifications by distributing copies of them to architects and trade groups, as well as to its own employees. The sales group and engineering group, and the operating department, can all play a prominent part in seeing that these codes get wide distribution and are understood thoroughly.

Because many houses being built more compactly and probably are of much tighter construction than formerly, more attention must be paid to ventilation, venting and accessibility for servicing. The utility room type installation of heating equipment is a good example of cases where safety is often dependent upon proper installation.

Equipment distributor's position

The equipment distributor can be of considerable assistance in seeing that proper sized equipment comes into the gas company's territory.

Recently the servicing of house heating equipment has attracted attention in communities where there has been a rapid growth in the number of gas heating installations. Utilities seeking an answer to this problem must consider their general service policies, service personnel and training, and entire territory. A company can benefit by the exchange of statistical data with other companies, providing it is familiar with the service policies and operating practices of the other companies. However, there is much to be said in favor of each company developing its own statistical information which may be used to predict its future position and manpower requirements in furnishing house heating service. Often such an analysis will indicate a need for changes in service policies and operating practices, or the need for training of personnel and the proper supervision.

Furnace and boiler cleaning

In reviewing the records for our company which we have found to be of most value, it should be borne in mind that in 1940, when we distributed 600 Btu mixed carburetted water gas, we were voluntarily inspecting and cleaning approximately 17,600 furnaces and boilers, whereas today with straight natural gas, we have been able to discontinue the voluntary cleaning and inspecting, although we continue to clean at no charge any furnaces found to need cleaning.

The decrease in our lighting and turn-off orders has been brought about primarily through a customer education program.

It might be well at this point to note that due to manpower shortages during the war, it was essential to curtail voluntary inspection. Following the war, during 1946 and 1947, we converted from manufactured to natural gas, at which

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Experience and Practices in Gas Odorizing in the Niagara Mohawk System

by T. C. Moran

System Operating Engineer—Gas
Niagara Mohawk Power Corporation

THE Niagara Mohawk system, in Upstate New York, began receiving natural gas in September 1932, for use in an 875 Btu mixture with manufactured gas. Odorization was not generally practiced until we changed to straight natural gas, in December 1947.

Some of the natural gas was sold as straight natural, without odorization, to interruptible industrial customers from new steel lines that were laid, in part, in city streets to reach those industrials. An old mile-long cast iron line was used to bring gas through city streets to heat our central office. This gas was odorized and represented our first odorization practice.

The dilute sulphide type of odorant was used at a rate of about thirteen pounds or two gallons per MMcf and proved satisfactory to the extent that we had no trouble or incidents during the period. It was dripped into the line at the regulator station servicing it.

The mixed gas was 70 per cent natural and 30 per cent coal gas. That percentage of manufactured gas added sufficient odor. For one year, from December 1946 to December 1947, we distributed a 950 Btu mixture which was only ten to fifteen per cent manufactured gas. This mixture still carried a distinctive odor and no odorant was added.

Straight natural gas was turned into the Syracuse-Oswego area of 78,000 customers in December 1947 and a city gate odorizer was started on the same date. The odorizer is of the mechanical type, using the gas meter and Archimedes pump mechanism. The odorant used was the dilute sulphide type. This type odorant was used for two years. During the period, monthly rates ran from 8.2 pounds per MMcf minimum to 13.0 pounds maximum, with 9.8 pounds per MMcf as a good yearly average. The record shows that no question of the intensity of the odor was ever raised in connection with any incident or claim.

Changed to concentrated odorant

For the sole purpose of reducing the bulk of material handled, this area went over to concentrated type of cyclic sulphide in January 1950. The quantity of the concentrate used in two parallel odorizers, treating a maximum of 85 MMcf per day and minimum of 12 MMcf is not sufficient to give good rate determination. So, for that reason and the tendency of the dilute to be somewhat more persistent, we changed to a 50-50 mixture of concentrate and dilute and today the Syracuse-Oswego area is operating on this special mixture. Rates on the concentrate average .58 pounds per MMcf and are currently averaging 1.15 pounds per MMcf on this special mixture.

This rate of odorant gives satisfactory intensity at the system ends, 50 miles away at Oswego and 47 miles away at Vernon. It may be effective at greater distances but these are the limits of our system supplied from the Therm City Station. There are 83,000 gas customers now receiving gas odorized with this material, all injected at the city gate station.

Late in 1951, our company introduced straight natural gas into two more major service areas, the Utica division and the Eastern division consisting of the metropolitan area at Albany-Schenectady-Troy.

The Utica division is served from one city gate station and the Eastern division from three. We use the same type odorizers at each as used at Syracuse. In these recently-changed areas, we are using the concentrated mercaptan type odorant, which does not indicate any dissatisfaction with the sulphide type. We are obtaining comparative results on these two widely used types of odorant material.

There are approximately 200,000 customers of Niagara Mohawk being served with mercaptan-odorized gas.

Odorant-injection rates

Rates of odorant-injection are as follows: minimum rate, monthly, 0.56 pounds per MMcf; maximum rate, monthly, 1.044 pounds; average rate, to date, 0.78 pounds.

The maximum distance from point-of-odorization to end-of-system is 45 miles, from South Schenectady to Hudson Falls. Odor intensity at the remote point is adequate.

Control of injection rate

The question of how much of any odorant to add is probably the most difficult to answer. From the beginning and to date, our method of control is still ultimately by the sense of smell. First, we record daily the amount of odorant and MMcf passed at the station and convert that to pounds per MMcf to determine that the apparatus is proportioning the material to the rate of gas flow. But that, of itself, does not tell us that we have the odor intensity that we wish at the end of our system. Rates recommended by the suppliers give us something to shoot at.

We believe that only by a *smell test at remote points of utilization* can we learn what results we are getting. Then we adjust the rate-of-feed at the odorizer to the pounds per MMcf which will yield the desired results at the test points. In each district these tests are made daily by our employees and reported to the superintendent's office. The intensity is graded as none, weak, adequate, excessive.

Diluter devices, to assist the tester in obtaining a more uniform calibration, are soon to be available. Basically, these devices mix measured proportions of odorized gas and unodorized gas or air into a face piece and indicate the relationship to the minimum or threshold odor intensity.

The room test is a semi-laboratory method and although we have made several such tests, we do not use it regularly for operating control, due to its cumbersome nature.

NARUC proposes a rule

In 1947, there was nothing approaching agreement in the natural gas industry in regard to the necessity of odorizing natural gas. Lately, there appears to be a clarification in regard to distribution of odorized gas. The 1951 report of the National Association of Railroad and Utility Commissioners, in their proposed uniform rules, says,

"Gas Odor—All gas supplied to customers shall possess a distinctive odor to act as an indication of its presence, except when service is rendered directly from transmission lines or when specifically exempted by Commission.

"Any gas which does not naturally possess such an odor shall have added to it an odorant to meet the above re-

quirement. Upon request, the company shall report the kind and method of odorization."

Our company is currently recording the following daily data for each odorizing station: gallons innage, gallons used, check of machine operations, smell test intensity in distribution system, pounds of odorant per MMcf for the day and month to date, identity of operators making the inspections and kind of odorant used.

The so-called "fly-wheel" effect of the gas system itself in the odorizing operation has been questioned. The internal surfaces and deposits in gas systems most certainly do become impregnated with these odorants. That is proven every time a line having carried odorized gas is taken up or even opened. The need for hourly records of odorant rate can be questioned for this reason, but daily checks are not believed to be too often, particularly for situations supplying large numbers of customers and then, principally, to insure that the mechanism is operating properly.

Odorizing results and effects

1. It appears to us to be reasonably simple to obtain and maintain proper odor intensity to give early indication to customers of the presence of unburned gas around their appliances or in their homes.

2. It is less effective in disclosing street leaks where the gas has to pass through soil or water. The intensity is greatly reduced by passing through even three or four feet of damp earth.

3. The amount of sulphur added by these odorant materials has never resulted in any complaint, based on the amount of sulphur, from an industrial customer or other user. New York State standards for manufactured gas place total allowable sulphur in manufactured gas at 30 grains per 100 cf. Our supply contract for natural gas allows a maximum of 20 grains per 100 cf.

4. Excessive leak complaints from gas users can be promptly generated by overodorizing. Even though most of these turn out to be "nuisance leaks" or the ordinary results of slow burner ignition, they still have to be answered, a costly service.

5. The use of alcohol on gas odorized with sulphides reduces odor intensity. This has been correlated with dates of anti-freeze injection by our natural gas supplier. Tests show high concentration of by-product methanol has a definite masking effect.

6. We have no record of any employee or others being injured or having impaired health from handling the materials. Men use rubber gloves and wash with a solution of potassium permanganate.

7. We have no evidence that it has damaged or deteriorated our system in any way. The tankage and piping at the odorizers are not attacked after five years.

8. Where natural gas is replacing manufactured gas, a high rate of odorizing is necessary initially to get such materials as oxides, tars and oils inside the old system saturated to a point where they will permit the proper intensity of odorant through to customers. This period is probably measured in days, not hours.

9. Effect of fogging oil has not yet been demonstrated to us. We fog in all districts, except in a small new system just placed in operation. A year from now it may be possible to state that it takes less odorant if fogging oil is not used.

Anticipated improvements

We expect to accomplish these further improvements in our practices:

1. Use of diluter or similar instrument as an accessory in making smell tests.

2. Installation of metering devices on the liquid feeding from odorizers. Improved accuracy in determining daily the amount of liquid odorant used at the smaller stations.

General comments

Odorizing stations near communities pose a problem in avoiding nuisances or alarming reports, due to spillage, leaks, or just ordinary handling of this offensive material. We have had several neighborhood alarms from this cause. Ordinary purification oxide is effective in sponging up the mercaptans. We use sodium hypochlorite or chlorox for the same purpose on sulphides.

Drums were formerly returnable; now they are not. The disposal of non-returnable drums may become a problem. They cannot be disposed through the usual scrap channels, without preparation. One pint of fifteen per cent sodium hypochlorite is added to a full 55 gallon drum while filling with water, after which heads are knocked out and drum is junked. They may be burned out, with somewhat more difficulty.

How much odorant to stock is also a problem. Accidents to drums and tanks, releasing odorant can be quite serious. We have had public complaints of gas leakage from only the amount of odorant seeping from a drum plug.

Costs

Installed cost at a city gate station, based on 1,000 gallon storage, two odorizers housed in masonry building, with an odorizer station capacity of 200 MMcf per day, was:

Structure	*Equipment*	*Total*
$2,100	$6,300	$8,400

Operating costs during 1951 were $0.0012 per Mcf.

Appliance Operation and Servicing Affected by Gas Conditions

(Continued from page 14)

ulators, controls and even at the orifice caps.

One natural gas utility has furnished data giving some actual figures on consumer service calls as affected by gas conditioning.

This utility with 135,000 meters and 40,000 house heating customers had this experience:

In the fall of one year when the first heavy instantaneous demand ran high, dust troubles developed to an extent that caused 3,680 pilot outages above normal, in a period of three weeks. Although this company had experienced "dust storms" in other years, this was the first instance in which it developed to such a great magnitude. Investigation of this "dust storm" resulted in information showing that the degree of oil fogging had not been sufficient on a continuous basis to hold down deposits in the distribution system.

This experience resulted in a better controlled policy of gas conditioning on a year around basis.

Odorization of natural gas is something that must be done, but with it we must contend with the corrosive effects of sulphur in one form or other, which, we are told, is the base of all types of odorants.

A corrosion-free product with permanence of odor is the panacea that it is hoped someone can provide for the industry.

In customer service work, as in other gas department operations, we associate odorants with gas leakage and leakage detection.

In the discussion of various gas conditions pertinent to customer service, it is not our purpose to explore what arithmetical number of service calls might be expected per 1000 meters for each incremental gas pressure drop until the pressure gage reads zero.

Our purpose is to direct attention to things generally known, with a view towards further improvement in providing a pure, usable gas for our customer appliances. The sale and use of gas is different from that of most commodities in that it requires control of flow and mixture adjustment at the point of use. In our case, that is at the customer's premises. It behooves us to do everything possible to provide a product that meets the acceptance of the customer in a manner that encourages both continued and expanded use.

The appliance manufacturers' view

We must also give fair consideration to the manufacturer of gas appliances. At times we may have been guilty of asking the impossible from him in appliances that would perform trouble-free under any and all conditions.

We are asking the manufacturer for greater simplification and standardization of parts involved in service operations. We are asking for better accessibility, for better materials, greater efficiency, closer limits in controls, streamlining and eye appeal, all at the lowest cost at which he can produce appliances in a competitive market.

We must also do our part if we are to warrant his continued cooperation.

How Courts View Evidence in Gas Rate and Tax Cases

by Leo T. Parker
Attorney at Law
Cincinnati, Ohio

CONSIDERABLE discussion has arisen from time to time over the legal question, "What evidence is important and convincing to the higher court to enable a gas company to increase its gas rates?"

First, it is important to know that the courts consider the "investments" of the company supplying the gas.

All higher courts agree to these facts: the prudent investment theory of gas rate base valuation contemplates that gas rates will enable the investor to maintain his *original* prudent investment intact until it is recovered, through the usual annual charges to depreciation, the expense reflected in a depreciation reserve. Hence, if money in a prudent investment becomes obsolete before it has been recovered in full by the investor, it is not erroneous for the Public Service Commission to include such property in the *rate base* until such full recovery has occurred. Otherwise it would be difficult, if not impossible, to induce investments in the common or preferred stock of a gas company.

In gas rate proceedings, whether the risk of obsolescence has been borne by the investor in the past and whether he has been compensated for such risk is an inquiry which must be made by the public service commissions.

Protection for investors

In the case of Washington Gas Light Co., v. Baker, 188 Fed. (2d) 11, the court said, "So long as the public interest—i.e., that of investors and consumers—is safeguarded, it seems that the Commission may formulate its own standards. But there are limits inherent in the statutory mandate that rates be 'reasonable, just, and non-discriminatory.' Among those limits are the minimal requirements for protection of investors. And from the earliest cases, the end of public utility regulation has been recognized to be protection of consumers from exorbitant rates. Thus, there is a zone of reasonableness within which rates may properly fall. It is bounded at one end by the investor interest against confiscation and at the other by the consumer interest against exorbitant rates."

Another higher court held that the premium on the capital stock, debt capital represented by long and short term notes, and reinvested surplus, were properly included in the capital investment of a gas company for gas rate making purposes.

For comparison, see Boston Consolidated Gas Co. v. Dept. of Public Utilities, 97 N. E. (2d) 521, where the court said, "The master rightly included in the capital investment of the gas company for rate making purposes the premium on the capital stock, debt capital represented by long and short term notes, and reinvested surplus."

Another important point of law relates to profits and expenses.

A court held that when the company determines upon its proposed rates it may expect that it will not be allowed to charge disputed expenses against gas income.

Position of appliance profits

Relative to profits earned by gas corporations from the sale of gas appliances, in Donham v. Public Service Commissioners, 232 Mass. 309, 326, the higher court opinion held that "If the appliance business is really a part of the gas business, the gas customers are entitled to have the profits from appliances included in the earnings of the gas business. If it is really a separate business its expenses ought not to be charged against the gas customers."

And in Lowell Gas Co. v. Dept. of Public Utilities, 324 Mass. 80, the court said, "The sale and servicing of gas appliances constitute a separate business from the supplying of gas. It would not be fair, on the one hand, to charge all customers with higher rates so that some might buy appliances and have them serviced at less than cost, or, on the other hand, to lower the cost of gas service because of a profit on those items."

Therefore, if a gas company treats and considers the sale of gas appliances *separately* from the gas distribution business, the profits or expenses therefrom cannot be considered for gas rate making purposes. See Selectmen of Concord, 296 Mass. 394, 398.

A view of salaries

With respect to salaries of employes sent to the homes of gas consumers to repair gas appliances, the court said, "We have no difficulty in agreeing that the expense of sending men to customers in response to complaints of leaks, of the faulty operation of appliances, whether purchased of the company or elsewhere, and of similar difficulties is a proper charge to the operating expenses of the gas business. But the cost of appliance salesmen, of clerical work of the appliance business, and the cost of advertising appliances for sale seem to us to stand on a different footing."

The higher courts hold that sales tax and use tax are both "privilege" taxes. The sales tax imposes upon the seller a tax for the privilege of selling tangible personal property and the tax is required to be paid by the seller. The use tax is a tax upon the privilege of using, consuming, distributing or storing tangible personal property after it is brought into a state or municipality from outside those limits.

Sales and use taxes

A question recently presented to a higher court is whether a public utility organized to supply gas to inhabitants of an unincorporated town must pay sales and use taxes to the state.

This court held in the negative.

The Madison Suburban Utility District was organized, as a corporation, and authorized by state laws to issue revenue bonds, and to fix rates for its services ample to amortize the bonds and pay all costs of maintenance and operation. The corporation's affairs are directed by a board of commissioners who serve without compensation and are self-perpetuating. There is no profit to any one since any earnings from the operation of the corporation are required to be reflected in the expansion of the system or in the reduction of rates charged.

The question presented the court in Madison Suburban Utility Dist. v. Carson, 232 S. W. (2d) 277, "Can the state collect sales and use taxes from the corporation on materials and supplies purchased and used by the corporation?"

Counsel for the corporation argued that (1) the corporation is entitled to be exempt from paying both the sales tax and the use tax which collected by the state because it is a governmental agency and an arm of the state government as designated by the state law under which it was incorporated, and (2) the tax, although indirect, burdens the utility corporation.

State counsel presented this argument: The corporation is not a municipal corporation, in the true sense of the term, but is in fact merely a quasi-corporation and that as such it is not en-

titled to an exemption under any state law.

Notwithstanding this latter argument the higher court held that the corporation need not pay sales and use taxes to the state, saying, "All tax measures when called in question in the courts should be determined by their practical operation and effect rather than by what they are named. . . . Merchandise purchased by surburban utility district organized under Utility District Act from sellers within the state and outside the state was exempt from sales and use taxes, since the practical effect of collecting such taxes would be to diminish the revenue of the district, thus amounting to a 'direct tax' levied by state on such revenue, which is exempt from taxation by express terms of Utility District Act."

For comparison, see Darby's Lessee v. McCarrol, 6 Tenn. 286.

Contracts must be specific

Modern higher courts consistently hold that all contracts "stand on their own bottoms." The courts uphold the validity of contracts "as written," so long as such contracts do not violate a valid law. Hence, if officials of a gas company sign a contract to "extend the service" the gas company is obligated to comply with the broad terms of the contract, notwithstanding arguments to the contrary.

Written contract controls

Another important point of modern law is that verbal or parol evidence or testimony has no effect to vary the terms of a written contract.

For comparison, see Southern Coast Corp. v. Sinclair Refining Co., 181 Fed. (2d) 960. Here, the testimony showed that a written contract gave a buyer 90-day option to purchase gas for the years 1946 to 1951 at a stated rate, and gave the seller a preferential right, in event the buyer failed to exercise the option, to meet any gas price quoted the buyer by a reputable, responsible, and then existing gas pipe line distributing company. A clause in the contract required the gas buyer, before purchasing gas from a competitor, to obtain the seller's written refusal to meet the competitive price offered.

In subsequent litigation the higher court in effect, held that the written contract stood "on its own bottom." The higher court held that verbal or parol evidence showing that a reputable and responsible distributing company was the only type of competitor whose bid the seller would have to meet, was not admissible. The court said, "If appellant interpreted this as a breach of the contract, it was privileged to bring suit on alternative grounds. Appellant's attempts to vary the terms of this written instrument by parol testimony were correctly denied. The parol evidence was properly excluded under the parol-evidence rule."

Another important point of settled law is that an easement stands *exactly* as written. The courts cannot and will not either extend or enlarge the ordinary meaning of a written easement contract, nor will it rewrite or alter an easement contract in any manner.

In Milwaukee v. Public Service Comm., 31 N.W. (2d) 571, it was shown in 1927 a corporation was desirous of laying mains through a town to increase facilities to its customers in certain areas. The corporation negotiated and signed an easement contract under which it acquired the right to lay its mains along a designated street. In consideration for this easement it agreed to "extend service" to "all" abutting property owners.

In subsequent litigation the higher court held that the public service commission had authority to compel the corporation to comply with the exact terms of the easement, and further to supply the promised service. This court held that the corporation must furnish service to property owners who had acquired building lots 500 feet in depth, although when the easement was granted the longest lot did not exceed 175 feet in depth. This court said, "There is nothing in the contract between the utility and the town so limiting the utility's duty, and the court cannot now write in a provision which the utility wishes it had inserted."

Responsibility for main breaks

It is well established law that a city or gas company must exercise "reasonable" care in construction and maintenance of gas mains. This means that the company must employ a reasonable, careful and prudent engineer to install the main, if the company is certain to avoid damages in the future resulting from improper installation. Failure to use this degree of care renders the city or gas company liable for resultant damages if the gas line breaks, or is caused to break.

It was disclosed that real property was damaged when a main was broken by a large boulder which rolled down a hill, in Knight v. Utah Power and Light Co., 209 Pac. (2d) 221.

The counsel for the company argued that there was no liability because the engineer in charge of construction and installation proved that the pipe line was constructed in accordance with specifications, prepared in accordance with the best engineering practice.

Nevertheless, the jury held the company liable in damages because the main was not covered with dirt. The higher court approved the verdict, and said, "There is evidence from which the jury could conclude not only that defendants (corporation) could have reasonably anticipated that rocks would damage the pipe line but also that defendants were charged with knowledge that this was an area in which rocks periodically rolled down the mountainside. . . . It seems unnecessary to argue that proper engineering standards require a pipe line to be buried if it can be reasonably anticipated that rolling rocks will damage the pipe line."

Implied easements that are valid

"When and under what circumstances does a gas company have an easement to use private property without compensation? If the owner of private property does not give a gas company a right to use his property for any purpose, as laying gas mains, drainage, installation, or the like, will the court *imply* such a right or easement?" After asking those questions, a reader continued, "Please give a dependable rule as to when a gas company has a valid easement by implication."

According to a recent higher court, whether a gas company has an easement "by implication" depends on the *intent* of the parties. Further, the original "intent" is determined from the nature of the property, the surrounding circumstances, and the inferences drawn from the circumstances.

"The only person who may grant a permanent easement is the owner of the land . . . " the court said in Pietro v. Triano, 74 Atl. (2d) 710. Whether an easement by implication arises depends on the intent of the parties and that intent is determined from the nature of the property."

For comparison, see Stein v. Bell Co., 301 Pa. 107. This higher court laid down new law, to establish an easement by implication there must be (1) a separation of the title, (2) such continuous and obvious use before the separation as to show an intention to make the alleged easement permanent, (3) the easement must be necessary to the beneficial enjoyment of the land granted or retained; and (4) the servitude should be continuous and self-acting. Also, see Becker v. Rittenhouse, 147 A. 51, and Vanderwerff v. Consumers Gas Co., 71 A. (2d) 809.

Owner's advice held to be negligence

According to a late higher court decision, if a property owner gives advice or encourages employes of a gas company or other employer to disconnect dangerous gas appliances, such property owner cannot recover subsequent damages resulting from such encouragement or advice.

House Heating Service Assures Satisfaction and Position

(Continued from page 15)

time we inspected and adjusted house heating equipment. Certain other modifications in our practices during this period of 1940 to 1951 included the decrease in amount of work we did in baffling and testing conversion burners, cleaning of steam controls, balancing of warm air heating systems, replacing dust filters on warm air furnaces. Our policy at present is to encourage the customer to have outside agencies perform these services for him, although we will do this work or sub-contract it if the customer desires.

Heating service records

The records which have been found to be of most value are:

1. The number of installations by makes and types of systems.
2. Average hourly input in Btu's.
3. The number of orders completed daily. (Of the total number of orders executed, a further division showing the number of light orders, turn-off orders, and voluntary inspections or cleans is desirable.)
4. Total orders per year per house heating installation.
5. The average man hours per order. (This usually includes direct labor and field supervision.)
6. The average cost per order.

It is interesting to compare our figures for the years 1940 and 1951.

	1940	1951
Average house heating installations	22,000	101,900
Average input Btu/hr. per heater	124,000	110,000
Orders Completed per House Heater per year	**1940**	**1951**
Lights or Turn-ons	.56	.11
Turn-offs	.54	.03
Voluntary inspects or cleans	.80	.00
Other service work	1.95	.90
Total ave. orders per heater per yr.	3.85	1.04

In 1947, we turned off approximately thirteen per cent of the heating installations; in 1951 we turned off approximately three per cent. In 1947, we turned on approximately 41 per cent of the house heaters; in 1951 we turned on approximately ten per cent of the house heaters. This decrease in orders has been possible because of customer education.

Service training program

We have instituted a formal training program for all service department employees with great emphasis placed on the servicing of house heating equipment. This we felt was necessary, due to the addition of new types of heating equipment, and the overall increase in servicing costs. Customer education was planned, emphasizing the desirability of leaving pilots on during the summer months, or of having the customer light and turn-off his own equipment. We have used various forms of literature to accomplish this, such as lighting instruction cards which were either mailed to the customer or left on the heating plant by the serviceman when he instructed the customer how to light the equipment.

In addition to this, we have mailed each year, usually in April, a notice urging the customer to leave his furnace pilot on; followed by a postal card, usually sent in May, reminding him to do so. Then in August another notice was sent requesting those customers who have not left their pilots on to try to light the equipment themselves or to call us before September 1st so we may instruct them how to light their equipment. Early in September we have mailed a notice advising the customers not to delay in trying their heating equipment to see if it will operate properly. Included in this notice is a warning that there might be considerable delay if they wait until cold weather to request us to start their heating equipment. We send a booklet to new house heating customers on the use of their equipment.

A program of this nature requires the combined efforts of customer contact personnel and of service department personnel throughout the year in order to minimize the fall light-up peak load.

There are many factors that enter into service work and the number of calls received, particularly where, in addition to changing from manufactured gas to natural gas, there is a large increase in building activity which often means new types of equipment and customers who are using gas for heating for the first time.

In our territory, for instance, many of the occupants of new homes are not familiar with the operation of the heating equipment. Particularly for the first season they need some instruction and often assurance that the equipment is working properly. It is necessary that the servicemen be thoroughly familiar with all new equipment. Here is where training, whether it is field or classroom, or a combination of both, is essential.

The above suggestions may seem burdensome and detailed, but the company that adopts them will find that they pay dividends in customer satisfaction and in consequent increasing loads.

American Gas Fundamentals OUTLINE

Natural Gas
- *Geology
- *Drilling and Completion

Manufactured Gases
- *Coke oven gas; producer gas, blue gas; carbureted water gas
- *Reformed gas
- *Hi-Btu oil gas

Liquefied Petroleum Gases
- *Sources, properties and uses

Basic Gas Laws
- *Perfect Gases
- Supercompressibility

Transmission
- *Pipe lines
- *Corrosion and pipe protection
- Compressor stations
- Hydrates and dehydration
- *Gas conditioning
- Flow formulae
- Orifice meter measurement

Gas Storage
- *Methods of storing gas

Gas Distribution
- *System design and operation
- *Pressure Regulation, Part 1
- *Pressure Regulation, Part 2
- *Leak detection and control
- *Metering
- Measurement and accounting
- *Odorization

Gas Utilization
- Combustion characteristics
- Domestic
- Commercial and industrial
- Interchangeability

Conversion Practices

Management Problems and Policies
- *Corporate structure
- Public utility regulation
- Public relations

*** Indicates chapters that have been printed since January 1, 1951; available without charge to new subscribers to American Gas Journal.**

How to Use the Material

American Gas Fundamentals *is a comprehensive compilation of basic gas facts to guide any gas utility employee toward a broader understanding of the industry as a whole. It is written in layman's language so that the technical fundamentals of every subject treated may be digested and understood by the non-technical reader.*

The series is designed to be removed from each current issue of American Gas Journal *and filed in a ring binder where it may be accumulated into a text book of permanent usefulness. Material should be filed under the major subject head appearing in the upper right hand box at the head of each chapter.*

Public Relations for the Gas Company

THERE is a great and growing consciousness on the part of gas utility managements that what people think about the company is important. Executives now generally recognize the fact that public opinion affects sales, shapes governmental thought and action, eases or complicates such varied operations as financing, expansion, servicing, conversions and adjustments. In fact, what people think of a company is now regarded as being at least as important as what the company has to sell, particularly when the product is largely service, as in the case of a public utility.

With this recognition—common to most industries in recent years—there has been a spectacular increase in management's interest in organized public relations as a means of gaining favorable public opinion.

Of course, all gas utilities do not place the same value on public relations, do not have the same concept of its place in the business, and do not necessarily agree even on the definition of public relations. To some it means publicity—getting the company name in the paper as often as possible. To others, participation in local civic activities is the crux of public relations activity. Still others see the wisdom of adopting a broad-based, integrated program with a vice president or the president himself in command.

Basic Steps

Throughout industry it is now generally recognized that sound public relations involves two fundamental moves:

1. The formulation and maintenance of policies calculated to win and hold the good will of each of the groups, or publics, with whom the utility or company must deal—employees, stockholders, customers, suppliers, competitors, federal, state, and local governments; the communities served, and the public at large.

2. Carrying to these groups, in terms of their own self-interest, the story of what the company, its policies and operations mean to them—and doing this consistently and dramatically through every means of molding public opinion.

The importance of the first step is obvious. If a company policy is contrary to the interest of any of the groups with which it must do business, no amount of publicity is going to alter its effect. Anyone adversely affected by misguided company policies is not likely to be impressed by published accounts of the company's superiority. On the other hand, an objective review of such policies at the top-management level would almost certainly result not only in the adoption of sounder principles, but also in the opportunity to earn public good will through the dissemination of the truth with respect to those policies.

As to the second step—it is a fine thing to do good, to live right, to have good business morals and manners, but it doesn't help very much in a business way unless people know about it. That's why it is so important to carry the story of the company's policies, achievements, objectives to every group whose good will is wanted.

The importance of this step and the public notice it gets has led in part to a popular misconception that public relations is merely a glamorized way of describing publicity or press agentry.

Publicity and Advertising

Actually, publicity is just one of the channels of communication used in a public relations program. There are others, among the best known and most effective of which are advertising, personal contact and direct mail.

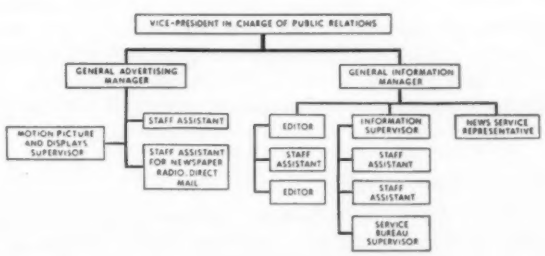
Publicity, then, merely means mention of the company or its objectives in the news and editorial columns of newspapers, magazines and the trade press, or on radio and television newscasts and other programs.

Advertising, of course, involves the use of publication space or air time or other media for which the utility pays at a specified rate per line or per hour.

Personal contact involves an almost unlimited range of activities—some planned and staged, others occurring in the normal course of business. Then there is the contact of management with employees, with employees' families, with business and civic groups, with schools and colleges. It matters not whether the personal contact occurs when the president of the gas utility addresses the graduating class of a university, or whether the contact is between the meter-reader and the housewife. The fact is that every meeting between anyone connected with the gas company and any member of the public has a public relations potential for good or for bad. Hence an important part of any gas utility public relations program involves the education of everyone on the payroll so that he is equipped in some degree to serve as a positive force in building company good will.

PUBLIC RELATIONS DEPARTMENT

Actual organization of the department in a major utility



Very few gas companies—few companies of any kind, for that matter—have decided all at once to launch a full scale public relations program. Public relations as a business practice is still in a state of growth and development within industry. Many gas companies have not yet formalized their public relations programs. Yet it has been demonstrated in the case of many utilities and other industries that the soundest public relations programs result from a formal, scientific, objective approach to the subject.

The analogy in some cases is to the man who doesn't feel well and goes to the doctor for a general check-up, diagnosis and treatment. In other instances the patient has a specific set of symptoms he'd like to have examined. In still others—and these are particularly gratifying to the doctor and rewarding to the patient—it's a case of a reasonably healthy organization wanting to stay that way.

A company starting from scratch to consider its own public relations position may find it difficult to be truly self-analytical. It is often hard for management to evaluate with true objectivity the public relations import of decisions or practices for which it is responsible in managing the business. It's difficult, too, for those working for him to be completely objective and forthright about his or their public relations sins, if any.

Often as management executive comes to recognize the importance of good public relations it also recognizes that company thinking may be colored to some extent by closeness to the operation. Hence there is now a tendency toward obtaining professional public relations advice from specialists in that field.

Organizing a Department

In organizing a public relations program, the gas utility may consider three possibilities:

1. Establishing or enlarging the company's own public relations department.
2. Employing the services of an outside public relations counsel.
3. Utilizing the public relations department of its advertising agency, if the agency is so equipped.

It is also possible to combine the services of either the public relations counsel or advertising agency with an internal public relations department. Where outside professional talent is employed, it is recognized as imperative that a top executive be responsible for liaison and guidance.

With or without professional assistance, consideration of public relations begins with an examination of the groups or publics who are important to the organization. Of prime interest to the gas utility, of course, are its customers—residential, commercial, industrial. Incidentally, the number of meters on the books of a utility may be a fine indication of its business volume, but a company that is alert to public relations does not consider its customers as just so many thousands of meters. In fact, it is fundamental in good public relations to think and talk and write of customers as housewives, hard-working husbands, families, merchants and industrial managers, all with interests of their own.

Groups Cultivated

Aside from the immediate customers, there are many other groups whose good will is important to the gas utility. Among them are appliance dealers, manufacturers, governments (federal, state, local), employees, competing utilities, builders, architects, the community or communities served, suppliers, schools and colleges, other gas utilities, and, of course, the public in general.

The importance of any particular group may vary city by city or utility by utility because of local conditions. Each group is always viewed in terms of its own special interests —and the utility's interest in it. Following a study of the various groups, four steps are basic to the fulfillment of the public relations program:

1. List all of the problems involving any or all of the groups.
2. Outline the objectives of the program, evaluated in terms of importance and designated as to immediate urgency or long-term significance.
3. Lay out a detailed plan of attack: detailing policy, strategy, activities, media. Schedule timing of advertising, press releases, special events, etc.
4. Assign definite responsibility for execution of all details of the program.

The use of a detailed, step-by-step guide such as the one outlined here helps immeasurably in seeing to it that all important aspects are covered in the initial planning, permits close checking of the program in action, facilitates budgeting and expense control, and brings the entire effort down to a solid, practical, efficient footing.

Many gas utilities have done outstanding jobs in the field of public relations advertising. There have been many long-range campaigns planned to build prestige for the company, for gas as a fuel and for the gas industry in general.

Newspaper advertising also has been used in seasonal messages to consumers—educational messages telling householders how to care for gas appliances, or when and how to have heating systems and other equipment checked. Such advertising has been used extensively by many utilities in connection with conversion to natural gas.

Local Adaptations

One Midwestern company in particular has excelled at keeping the public informed as to the prospects for approval of house heating applications. Its newspaper ads, written in straightforward, easily understandable style, have reported on the amount of gas available and of new supplies to come, and have translated cubic footage into intelligible figures indicating how many additional homes can be served and how soon.

Outstanding gas installations are often exploited to good advantage in gas utility advertising. An Ohio company, for example, in one of its ads used press photographs of the spectacular all-gas kitchen in the new United Nations building to arouse interest in gas as the modern fuel.

Other companies are doing a similar job on a local basis by depicting the use of gas by their large industrial customers, particularly those with outstanding records in defense production. There are few better ways to maintain the good will of customers while singing the praises of gas. Enterprising utility managements have begun to incorporate such customer plugs in their radio and television commercials as well as in their public relations advertising.

Of course, advertising—particularly in newpapers—has been used repeatedly in times of emergency, in connection with applications for rate increases and in cases where utilities felt it advisable to define the company position with regard to government regulations or restrictions.

Publicity, particularly in local newspapers, is also help-

ing to establish better understanding of gas utility operations on the part of the general public. Utilities of all kinds down through the years have been the subject of criticism because of their alleged imperviousness to public opinion. The average gas, electric or telephone user in times past seemed to feel something approaching an obligation to damn the utilities as often and as vehemently as possible—whether or not he knew what he was talking about.

The presentation of facts, the portrayal of utility managements as human beings, and the explanation of problems and of improvements in service and appliances, have tended to slow the stream of vituperation and to place in the minds of many rational people information which is of use in answering unfair charges that are still all too frequently made against utility companies.

Editorial Cooperation

Gas utility publicity in newspapers takes many forms, hits many departmental editors, and reaches many important groups in terms of their own special interests. Releases on company financial reports, reports on business volume and growth are readily accepted by business and financial editors. Publication of such information is beneficial in stockholder relations and in building prestige in business and financial circles. Women's editors of newspapers appreciate tips on homemaking and cookery involving the use of gas appliances. Human interest stories involving the company and major news announcements about new utility projects often are accorded front page position by newspaper editors.

Many utilities which years ago resented the "prying" of newspapermen now have established a good working relationship with the press. One former newsman who is now handling publicity for a utility company explains his effective working arrangement this way:

"There are some things the newspaper reader would be interested in knowing about us. There are things we want him to know about us. The editor's job is to serve the reader with worthwhile reading matter of legitimate news or feature value. By considering the reader and the editor, I can do a fairly consistent job of shaping our publicity material so that it will be welcomed and published."

The same publicist adds that there is another important phase of his press relations work. "I feel that there is more to the job than 'using' the editor as a channel for our ma-

A SECTION OF A SAMPLE PUBLIC RELATIONS WORKSHEET

Used in step-by-step analysis of various "publics" and in planning public relations activities, variations of this form —with additional detail—facilitate the organization and control of public relations programs in many companies.

Public under consideration	What they think now	What the utility would like them to think	What to do about it
Home economics teachers	General preference for electricity for cooking.	That gas is the best fuel for cooking.	Survey equipment in use in home economics departments. Offer a helpful replacement plan to the schools. Have home service department stage gas cooking demonstrations for the teachers. Discuss not only gas cooking, but also such subjects as kitchen planning, nutrition and dietetics. Offer lesson plans involving use of gas range for teacher's use in home economics classes. Work with range manufacturers and the trade to inspire helpful publicity in nationally circulated home economics publications.
House heating dealers	Resentful that the utility fails to provide advance information of additional gas supplies or curtailment of gas previously announced as available—leaving the dealers either with too heavy or too light inventories.	That the utility is doing everything possible to help the dealer to operate efficiently and to make a profit.	Hold regular meetings with dealers. Provide them with detailed information about applications for additional gas supply, the possibility of obtaining the additional gas, and the probable date of arrival. Also, if there is a possibility of curtailment of supplies already promised, give earliest possible warning and explanation. Translate additional cubic footage into heating installations—citing the number of new home installations and conversions which will be made possible. Prepare regular bulletins for distribution to dealers, detailing the utility's efforts to be helpful, and offering the best available information for dealers to use in their planning. Provide the same or similar bulletins to manufacturers, and urge them to lay plans for quick deliveries to area dealers should additional gas become available.

terial. I think I should serve him, too, when he is seeking information which we should be able to provide. For that reason I've provided all the city desks in town with my home telephone number and that of other company people in case an editor should need information quickly out of business hours. This not only improves our relationship, but insures our being able to present our side of any story whether it has to do with an explosion, labor difficulties, consumer complaints, government regulations or anything else that might be controversial or important."

Certain leading gas utility companies have long been active in the use of personal contact as a public relations vehicle and as a selling tool. Cooking schools and demonstrations are held regularly as a means of educating the homemaker and keeping her sold on gas. Meetings with appliance dealers are frequent with many companies. An increasing number of utilities are encouraging executives to accept speaking engagements, and some have active programs of sending speakers along with motion pictures and slide films to schools, clubs and association meetings.

Employee Participation

Increasing attention is now being given to the employees as potential builders of good will. Many outstanding employee magazines are being published in the gas utility field. The more informative ones give recognition to individuals and departments and at the same time present facts about the company which are educational and important for the employee and his family and friends to know.

One of the important aspects of the successful gas utility program is coordination of the various goodwill-building activities and capitalizing on the fact that many projects or stories intended to appeal to one group will make friends among other groups as well.

For example, the presentation of a citation or award to an employee on the twenty-fifth anniversary of his employment makes good picture material for local newspapers. It might be possible to stage the presentation for television. Hence an event within the sphere of employee relations serves also to win favorable public attention for the company.

Although in some instances the interests of stockholders and employees might seem to be far apart, the fact is that both groups want to know more about the company. Some companies, recognizing this fact, are sending their employee magazines to all stockholders, while others distribute their annual reports to employees. The annual report itself usually is made the subject of a release to newspapers and radio newscasters so that its message gets beyond the usual fiscal audience.

In short, good public relations is good business. A small merchant practices it when he remembers foibles and peculiarities of his individual customers. He has the advantage of being able to face his trade every day and make direct, measurable impressions on them. The gas utility can make very much the same kind of impression, but the process is more complex and requires formalization; in other words, organization and a conscious, planned effort to win and hold friends. The extent to which it succeeds determines its "personality" as a company and its success in the community of business.

This chapter on Public Relations was prepared by
Eugene F. Martin, vice president, Carl Byoir & Associates

Full Training for Meter Shop Work Viewed as Economic Matter

by James W. Chrisman
The East Ohio Gas Co.

Adapted from a presentation to American Gas Association Distribution, Motor Vehicles and Corrosion Conference

The reconditioning, repairing, and testing of gas meters is one of the major activities in the gas utility business. Considered on a national basis there were 22,146,000 residential customers and 1,739,000 commercial customers at the end of 1950, nearly a million being added in the year, 1950. No doubt, there were at least 23,885,000 meters in service at the end of 1950. At an average value of $20.00 per meter this investment would total $477,700,000.00. To this may be added the investment of utilities in meter shops and meter repair equipment and the very large investment of companies engaged in the manufacture of meters.

Assuming that 1/10th of the meters in service are brought in for reconditioning each year (ten-year replacement basis) and that an average of 500 meters are repaired per employee per year, there would be 4,770 employees engaged in this work. If an average of 830 meters are repaired per employee per year a total of 2,877 men would be involved. On a five-year replacement basis the number of employees would be doubled.

To visualize the magnitude of the national training program for new employees assume that there is a 10% turnover per year. This would necessitate training from 300 to 1000 employees per year depending upon the period of replacement and efficiency of repairing. Older employees moving from one job to another must also be trained in the new work.

Meter repairing requires mechanical skill which can only be acquired by practice in doing the work. It cannot be acquired by watching someone else do the work, or by listening to instructors teach how it is done. And after the mechanics of the work are mastered additional practice and time are required to attain the requisite speed and efficiency for satisfactory production. Therefore, training on the job at each progressive station toward becoming a first-class repairman is practiced in most companies. Methods of doing this may differ between companies as does the procedure and amount of reconditioning required on each meter. In our company this training is done by the foreman assisted by fellow employees.

To illustrate some of the items involved in training a meter shop employee to attain the rating of a first-class repairman, the procedure followed in our shop in Cleveland will be used. Our situation may be unique among gas companies in that having lost the old shop and most of the experienced employees new personnel was assembled in 1946 and a new shop was occupied in 1948. This has involved training of many employees and setting up and arranging new equipment. Attention to many details and cooperation of everyone involved has permitted an increase in five years time from an average of 45 meters repaired per month per man to one hundred per man per month and it is our hope to do even better.

Steps in employee training

1. Selection of an employee.

Employees selected should be mechanically inclined, adaptable to working at a bench, and willing to do routine work day by day. Proper selection constitutes a major factor in being able to train the man for the job. Some people are not adaptable to this type of work.

2. Indoctrination in company policy.

Explanation of company policy, company benefits, pension plan, thrift plan, group insurance, employee credit associations, union contract, and many other things about the company may be handled either by the company training school or by the superintendent and foremen. Both have been successful in our company.

3. Trucking and handling meters.

Normally, trucking and handling incoming and repaired meters is the first job given a new employee. Here he learns the various sizes of meters, the importance of correct handling, becomes acquainted with other workmen and the type of work being done on meters.

4. Degreasing by washing the exterior of a repaired and tested meter with a solvent is the next event in a new employee's training.

5. Painting the repaired meter with two coats consisting of a primer coat of zinc dichromate rust inhibitor and the exterior enamel is the next step in the training program. Painting is done in a spray booth.

6. Paint stripping from old meters.

Operation of the large Metalwash caustic paint stripping machine is explained to the employee and he is stationed here for some time. By removing the paint the meter is cleaner to handle and a better visual inspection of the meter case can be made.

7. Preparing the meter for dismantling.

At this station the employee learns to buff any traces of paint and dirt from the meter after it has gone through the paint stripping machine.

8. Detopping tin case meters.

This operation is done with a Tocco automatic electric induction machine.

9. Desoldering valve plates.

Desoldering valve plates gives the employee his first opportunity to work with soldering coppers. The importance that a properly heated and clean tinned copper plays in this work is explained. The valve plate is straightened and tinned here.

10. Pressure test for internal leaks.

A pressure gauge is used in this operation.

11. Tin the top of the gallery, tube screws, and valve box.

12. Other dismantling.

Remove old packing, remove date tags and index box. Remove old flag arm shorts and drill and tap flag arm shorts. Check inlet and outlet tubes for alignment.

13. Topping.

The employee is now taught to solder the top on the meter and to top test it. This top test is a pressure test at one pound pressure with meter submerged in water.

14. Assembling and fitting up a meter.

Prior to this step the employee has had no detailed instruction in the functioning of a meter other than dismantling it. Here it is explained how the meter operates, the importance of removing worn parts, and replacing with new parts. In many instances a meter will measure a million to 1½ million cubic feet of gas before it is brought in for repair. Assuming an average of five revolutions of the meter per cubic foot of gas measured, a meter is subjected to approximately five million revolutions before it is reconditioned. It must therefore be accurately assembled to resist wear. Much time and practice is required to teach this assembly operation and the employee is given repeated practice under the direction of a foreman. So many operations must be learned here that only mention of them may indicate what is involved.

a. Remove worn parts.
b. Wash valve box with solvent.
c. Grind valves, install valves, and check for proper division.
d. Replace worn parts.
e. Pack the side and center stuffing box.
f. Solder in valve plate.
g. Install new repair tag.
h. Install new index box.
i. Check spacing of flag arm short.

15. Pressure test parts below the valve table for leaks—on a pressure testing machine known as the "merry-go-round" at 1¼ lbs. for one hour.

16. Test each compartment for tightness—four-pointing—at 1½" pressure.

By this time the employee has become a valuable repairman and has learned most of the basic operations.

17. Proving—outtesting.

In the proving room each meter is tested for accuracy and is adjusted to read correctly.

(Continued on page 32)

Rise in Corporate Profits Expected During July-through-December

by John F. Falvey

Financial Editor

STOCKS finally have broken out of their rut of the past few months and at the time of this writing have edged to a new high level since October 1930, measured by composite averages. But the complex factors at work in the economic and financial scenes suggest maintenance of a "wait, look and see" attitude.

John F. Falvey

Several factors might be cited to explain the rise in share prices—expanding volume of sales, stabilization of tax rates and improvement in profit margins reflecting both those factors and less need for inventory write-offs.

The aggregate of corporate profits is expected by some leading economists to increase sharply in the closing half of this year and to attain once again the high level they had reached a year ago before markdowns and inventory losses.

Another and important item is that defense spending continues to expand and is not expected to taper off until the year-end.

Tapering-off of defense spending in 1953, as now expected, may make the present slow recovery of stock prices a short-lived affair. But in the interim, utility and other company managements might take advantage of favoring market conditions in further financing expansion through equities.

Equally as important to investors as earnings is the volume of dividend payments which went to a new high level in the first six months of 1952. Dividend payments by corporations issuing public reports were ten per cent greater in May than a year ago, according to Department of Commerce data, just released.

According to estimates recently released by the Securities and Exchange Commission, individuals purchased nearly $2.2 billion of new stock issues during the calendar year 1951, for the greatest such acquisition since 1929. This represented twenty per cent of the $11.2 billion increase in the combined total of cash, savings accounts and securities held by individuals.

A spot check reveals that of every ten buying orders coming into some of the brokerage firms, seven are for railroad and public utility stocks.

Action of the bond market recently has been contra to that of the stock market. While new issues have gone out readily into buyers' hands, this has reflected chiefly the higher interest rate prevailing during the past several weeks. Corporate issues brought out on a lower yield basis from late April until mid-June, only now are beginning to move and at a slow pace. Whether paring of the pegged price may be required to dispose of these issues from investment underwriters' shelves is not readily apparent. One saving development in the picture, aside from increasing investment funds in institutional hands, is the relatively small amount of corporate bonds which are likely to come to market during early weeks ahead.

A vital force in the bond market are private pension funds which are estimated at anywhere from $1.25-to-$1.75 billion a year. Attesting to their importance is the fact that they are mentioned specifically by syndicate managers in practically every offering and frequently exceed the demand from insurance companies, which formerly were the largest single source of investment funds.

According to Dr. Marcus Nadler of New York University, the continued demand for high-grade obligations created by pension funds is bound to have an important effect on the capital market and, in fact, has tended to make the bond market highly institutional.

Clearing up of the bond inventory on dealers' shelves combines with the wealth of pension fund money to offset the adverse implications of a sharp decline in liquid funds of corporations as a group. Authoritative studies show the ratio of cash and Government security holdings-to-current liabilities of all business corporations to be only slightly in excess of 50 per cent. This is the lowest it has been in a decade.

Although a further drop in cash resources would be serious in that it would precipitate the need for further financing and would place pressure on management to cut back on dividends and plant expenditures and reduce inventories in industrial lines, compensating developments are expected to obviate the need for such drastic steps.

Taxes and accounts payable on the average seem to have leveled out and bank loans in the latter half of 1952 are expected to follow a more nearly normal pattern.

The total of these factors suggests that management will not be under pressure to reduce expenditures for needed current or fixed assets or to reduce dividend payments to preserve liquidity.

INDEX OF YIELDS : SELECTED UTILITIES STOCKS

	June 1952	May 1952	Apr. 1952	Mar. 1952	Feb. 1952	Jan. 1952	Dec. 1951	Nov. 1951	Oct. 1951	Sept. 1951	Aug. 1951	July 1951
Natural Gas Transmission Companies	3.98%	4.05%	4.08%	4.03%	4.36%	4.32%	4.50%	4.51%	4.67%	4.67%	4.65%	5.07%
Natural Gas Transmission & Distribution Companies	5.28	5.32	5.34	5.14	5.29	5.17	5.33	5.30	5.36	5.09	5.11	5.24
Manufactured & Mixed Gas Companies	4.84	5.06	5.13	4.99	5.18	5.05	5.25	5.36	5.32	5.43	5.46	5.52
Class "A" Electric Companies	5.60	5.54	5.65	5.51	5.61	5.53	5.80	5.78	5.83	5.74	5.69	5.97
Class "B" Electric Companies	5.55	5.57	5.61	5.48	5.70	5.64	5.76	5.82	5.78	5.74	5.78	5.86

This is a straight arithmetical index of comparative yields obtainable on a selected group of gas and electric utility industry common stocks.

The companies comprising this index have been selected by the AMERICAN GAS JOURNAL as providing a representative cross-section of each industry, from the standpoint of geographical diversification and of the relative importance of the individual companies in their areas.

No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because the yields afforded on the issues reflect such changes. The index is designed to show the rate of return and not necessarily market movements on the stocks comprising it.

This index is compiled from: natural gas transmission companies, 5; natural gas transmission and distribution companies, 5; manufactured and mixed gas companies, 4; class "A" electric companies, 4; class "B" electric companies, 5.

News of the Gas Industry

Small Gas Co. Buys Large One

New Jersey Natural Gas Co., Atlantic Highlands, purchased the gas properties of Jersey Central Power and Light Co., Asbury Park, last month.

The comparatively small company, serving about 14,000 customers in a relatively small section of two counties, took title to the Jersey Central gas division, serving about 84,000 gas users, paying about sixteen million dollars.

Jersey Central was ordered last year by Federal Securities and Exchange Commission to dispose of its gas holdings, and New Jersey Natural Gas Co. was the successful bidder.

In taking over Jersey Central's gas interests, New Jersey Natural Gas Co. increased its area from 90 square miles in two counties, to 950 square miles in five counties. Almost all the properties recently purchased are in the process of being converted to natural gas.

Before the purchase, the New Jersey Natural Gas Company was receiving three MMcf per day from Texas Eastern Transmission Corp. When additional facilities are completed the company has Federal Power Commission approval for purchase of two MMcf additional. The company takes over contracts with Texas Eastern, Algonquin and South Jersey Gas Co., supplied by Transcontinental Pipe Line Corp., for almost 20 MMcf per day to supply its combined service area.

Storage facilities of the company originally consisted of a 950 Mcf holder. Acquired from Jersey Central are 36 storage holders, including high pressure tanks, with a capacity of seven MMcf and 26 compressors with a capacity of 64 MMcf.

321 miles of distribution mains have been expanded by the purchase to 1,446 miles. The company originally owned two liquid propane plants and acquired six additional plants.

When all of the company's service area has been changed to natural gas, the company will convert related gas production facilities for standby, peak-shaving and emergency purposes to supply gas interchangeable with natural gas.

The company plans to set up new headquarters and five division offices. The company has sold appliances and expects to expand this business.

Kenneth D. Knoblock, president, Wisconsin Southern Gas Co., heads New Jersey Natural Gas Co.

Other officers are vice presidents, Irving Koerner, Allen and Co.; and James S. Abrams, former president, County Gas Company; treasurer, F. A. O'Neill, vice-president and treasurer, Wisconsin Southern Gas Co.; secretary, Sidney M. Schreiber.

Irving D. Pollitt, Jr. is manager of gas operations and Dale Otto is assistant manager. E. A. Morgan is in charge of the commercial department and W. D. Williams is sales manager.

Pipeline Pulled Under NY Harbor

The New York metropolitan area has a second inlet for the 250 MMcf of natural gas which it receives each day.

The final link in Transcontinental Gas Pipe Line Corporation's 6,600 ft. underwater line was pulled out of the water in Brooklyn late last month, from Staten Island, under The Narrows of New York Harbor. There it will tie the interconnected natural gas mains of local utility systems directly to the Texas gas fields, 1,800 miles away.

Raymond Crowe, chief engineer, transcontinental, signals arrival of pipeline after New York Harbor crossing.

The great length and depth made The Narrows crossing one of the most difficult underwater pipeline projects ever attempted. It is 2,000 feet longer than the earlier Hudson River crossing by Transcontinental. No other pipe line river crossing in this country approaches its maximum depth of more than 100 feet. The crossing was made with no interruption to harbor traffic.

Two winches embedded within caissons on the Brooklyn side of The Narrows, capable of pulling 425,000 pounds, brought the 24-inch pipe to its destination.

The new pipeline will rest in a trench averaging 25 feet in depth below the bed of The Narrows which at some points is about 80 feet below the surface at mean low water. When it settles into place it is estimated that the maximum depth of the line will be 108 feet below the surface. Backfilling the trench will provide additional protection for the half-inch pipe, coated with three inches of somastic and concrete.

On Staten Island, The Narrows crossing will be tied to an eleven-mile spur to connect with Transcontinental's main line at Linden, N. J.

The start of natural gas through the new line is anticipated during the next month.

Pacific Gas Corp Controls Gasair Corp

Controlling interest in Gasair Corp. has been purchased by Pacific Gas Corp. E. E. Hawley, vice president, Pacific Gas Corp., has been named president of Gasair Corp.

Gas Sales Up in April

Sales of gas to ultimate customers in April totaled 4,791 million therms, a gain of 7.1 per cent over 4,473 million therms sold in April 1951, American Gas Association reports. The AGA index of total gas utility sales for April, 1952, was 378.0 per cent of the 1935-1939 average. Sales increases in April were due to an increasing number of new gas customers and to increased consumption by industrial consumers. Degree days in April were 17.5 per cent fewer than a year ago, and 23.7 per cent fewer than the average-April during 1935-1939.

During the twelve months ended April 30, 1952, utility sales of gas rose to 50,353 million therms, an increase of 11.8 per cent over 45,032 million therms sold in the comparable period a year earlier.

Public Service NJ Builds Central Shop

Work has been started by Public Service Electric and Gas Company on a new shop in Springfield (N. J.), designed principally for the testing and repairing of gas meters. The new shop will be known as the State Meter Shop and will replace twenty-three district gas meter shops located throughout New Jersey.

The new shop will permit large volume operations at a central location with specialized equipment, resulting in quality and economy of performance. The building will have an area of approximately 80,000 square feet.

Shipment of the meters from the central plant to the districts will be on trailer trucks, which will carry specially designed meter hand-trucks to provide rolling storage. Manual meter handling will largely be eliminated by conveyors. Meter testing and adjusting equipment will be operated by electric controls.

William J. Bailey

William J. Bailey, 73, founder of the Day & Night Water Heater Co., died at his home on June 13.

He founded the firm 43 years ago and retired in 1945. The company is now known as the Day & Night division, Affiliated Gas Equipment, Inc.

Born in Portland, Mich., Mr. Bailey was graduated from Michigan State College as an engineer, worked briefly in Pennsylvania steel mills and went to California in 1904.

He began manufacturing his original invention, a solar water heater. Later he built a gas water heater which became the Day & Night model.

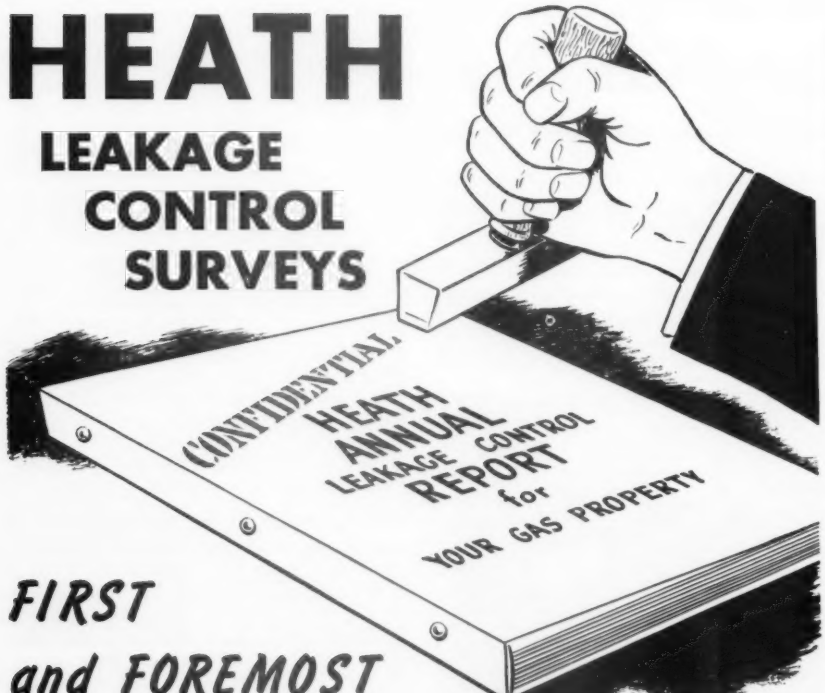
John C. Reed

John C. Reed, vice president, research, American Radiator & Standard Sanitary Corporation, died in Louisville, Ky., on June 14. He was 50 years of age; born in Glenfield, Pa., May 20, 1902.

Mr. Reed's positions with American-Standard were in the manufacturing and research operations. The new consolidated plumbing and heating research laboratories, soon to be opened in Louisville, were constructed under his supervision.

HEATH

LEAKAGE CONTROL SURVEYS



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HEATH REPORTS show the location of your leaks . . . classify them for size and importance . . . enable you to reduce your leakage to a minimum and eliminate the potential hazard.

Milton W. Heath originated this modern type of survey 20 years ago and has developed it continuously ever since. Today Heath serves over 400 gas properties in 40 states and five Canadian provinces . . . renews its contracts year after year almost 100%.

For many years Heath has employed only graduate foresters and placed them in the field only after rigid training under its most experienced men. In fact, all important progress in present day survey techniques, training, classifications, and types of reports have been brought about by Heath employees.

Heath conducts all types of surveys in all sections of the country during all seasons of the year. Daily reports cover each leak location with proper classification. Heath surveys are *more* than vegetation and soil surveys — they are intensive, all-over leakage control surveys.

After each survey Heath gives you a bound loose-leaf volume containing the original copy of each leak report; plus special reports on cases involving possible claims where gas is not concerned; also on greenhouses, schools, churches and public buildings.

The fact that Heath is the only nationally recognized leak location agency lends authority to its reports and opinions.

Heath reports — *all confidential* — are highly rated by your insurance company and will stand up for use by your claims department . . . Heath Reports can save you thousands of dollars every year. Don't delay! Decide today on a Heath Survey!

You can't sell gas that leaked out!

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Buchanan's FPC Renomination Tabled

The chairmanship of Federal Power Commission is again in a state of suspension, as a result of the 9-to-4 vote of the Senate interstate commerce committee not to report out the renomination of Thomas C. Buchanan, who was appointed chairman early this year. While the Senate committee's action does not finally determine Mr. Buchanan's status on the Commission, it had the effect of deferring further action on his or any other nomination beyond the end of the session. Thereby, FPC was returned to a four-member status. The Senate commission's return of Mr. Buchanan's nomination to the White House cleared the way for a recess appointment.

AGA Nominates Officers

Thirty-one gas industry executives from sixteen states and the District of Columbia have been nominated for election as officers, directors and chairmen of sections and general committees of American Gas Association.

The nominating committee, under the chairmanship of E. M. Borger, The Peoples Natural Gas Co., Pittsburgh, presented this slate of officers for election at the AGA convention in October:

For president: Frank C. Smith, president, Houston Natural Gas Corp.

For first vice-president: Earl H. Eacker, president, Boston Consolidated Gas Co.

For second vice-president: F. M. Banks, president and general manager, Southern California Gas Co.

For treasurer: Edward F. Barrett, president, Long Island Lighting Co.

J. F. Oates, Jr. Is AGA Director

James F. Oates, Jr., chairman and chief executive officer of The Peoples Gas Light and Coke Co., Chicago, has been elected a director of American Gas Association. He will fill the unexpired term of Frank C. Smith, president, Houston Natural Gas Corporation, recently elected a vice president of AGA.

Mr. Oates, in addition to being a director, also is vice-chairman of the AGA Promotion, Advertising and Research (PAR) Committee and is a member of the Board of Trustees of the Institute of Gas Technology.

Hendee Heads International Gas Union

Robert W. Hendee, president, Colorado Interstate Gas Co., and former president, American Gas Association, was elected president of the International Gas Union at the 5th International Gas Conference held at Brussels, Belgium, June 16-19. The election of Mr. Hendee for a three year term marks the first time an American gas executive has been chosen to head this organization, which was formed twenty years ago.

The International Gas Union is composed of representatives of gas associations throughout the world. AGA represents the United States. Charles E. Bennett, president, The Manufacturers Light and Heat Company, Pittsburgh, and AGA president was among the principal speakers at the conference. H. Carl Wolf, managing director AGA, also spoke to the international gas men.

Peoples Natural Wins Safety Award

The Peoples Natural Gas Company has received its second major safety award this year, the Award of Honor, from the National Safety Council.

Leo Nuhfer, safety director for the company, said that Peoples had achieved a 96 per cent better-than-par rating in terms of severity, and an 88 per cent better-than-par rating in terms of accident frequency.

Peoples won National Safety Council's first place among competing gas companies for its 1951 safety record.

Safety Award to Ohio Fuel Gas

Elyria district of The Ohio Fuel Gas Company has received the American Gas Association certificate for the best safety record in the gas industry.

W. H. Adams, AGA safety consultant, made the presentation last month in recognition of the district's completion of more than five million accident-free man hours of work. In establishing the record, the district's 255 workers bettered their own previous high of more than four million man hours without a disabling injury, reached in 1950.

Best previous no-lost-time record in the industry was held by the Hope Natural Gas Company of West Virginia which, in 1939, reached the three million man-hour mark.

MEN AT WORK

M. C. Albrittain is GSM in Baltimore

Mason C. Albrittain has been appointed general sales manager of Consolidated Gas Electric Light and Power Co., Baltimore. He will be responsible for all sales and promotional activities of the company. He has been general manager, industrial and commercial sales and promotion since October 1949.

J. A. Clark Is Consolidated Director

John A. Clark, president, Hope Natural Gas Co., was elected director, Consolidated Natural Gas Co., the parent company, at a meeting of the board of directors in New York. He replaces Loring L. Tonkin, of the Hope company, who retired July 1 in accordance with the company's retirement policy.

Werker Heads Amer-Stand Research

Herwart Werker has been appointed director of research for American Radiator & Standard Sanitary Corporation. Mr. Werker was promoted to his new position from the post of manager of the heating division of the research department. He will now direct all plumbing, heating and air conditioning research conducted by the firm.

American-Standard research facilities were recently combined in new, modern laboratories in Louisville, Ky., to the development of new products and new materials in the heating, cooling and sanitation fields.

Messenger Retires from Buell

Joseph A. Messenger, vice president, general manager and director of Buell Engineering Co., Inc., retired on July 1 from active participation with the company to take up consulting engineering activities in Philadelphia.

Mr. Messenger was originally employed by the United Gas Improvement Co. in their construction department.

When U.G.I. Contracting Co. was merged with several other construction companies to form United Engineers and Constructors, Inc., Mr. Messenger assumed charge of all gas distribution activities.

J. V. Postles Retires from PGW

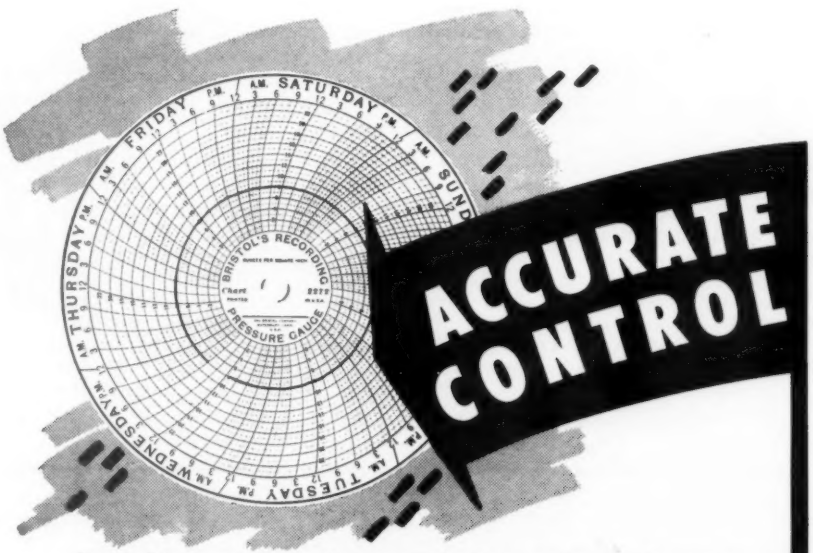
John V. Postles, vice president in charge of production, The Philadelphia Gas Works Co., retired on June 1 following thirty-eight years of service.

A native of Smyrna, Del., Mr. Postles was graduated in civil engineering from the University of Delaware. Upon graduation, he became associated with the construction department of United Gas Improvement Co. and remained there until 1914. He then transferred to The Philadelphia Gas Works Company.

In 1938 he became the engineer of works and in 1947 was elected vice president in charge of production.

HAROLD S. BIRKETT has been promoted to assistant secretary, *Brooklyn Union Gas Co.*

RICHARD M. BODE joins *Ladish Co.* in an executive sales position, valves and fittings division.



Reynolds Service Regulators are built to meet specific requirements — years of operation in the field through a complete range of operating conditions have proved not only their superiority but their durability. With parts so precisely machined for each model that they are completely interchangeable. The accuracy you require in performance is assured.

MODEL 10

Dead Weight or Spring Type, with or without Mercury Seal, or Dead Weight Safety Seal or diaphragm operated relief valve. All working parts are so accessible as to be interchangeable without removal from pipe line.

MODEL 20

Dead Weight or Spring Type, with or without Mercury Seal, or Dead Weight Safety Seal or diaphragm operated relief valve. All working parts are so accurate as to permit complete interchangeability in shop.

MODEL 30

For horizontal or vertical connections, with or without removable valve pocket. Available with either Spring or Dead Weight adjustment. With or without Mercury or Dead Weight Safety Seal or diaphragm operated relief valve.

Reynolds Gas Regulator Co.

ANDERSON, INDIANA, U. S. A.

GAS CONTROL SINCE 1892

R. FRANK BROWER was elected assistant vice president, engineering, *Consolidated Edison Co. of New York.*

LEO M. BROWN was advanced to assistant sales manager by St. Paul Hydraulic Hoist division, *Gar Wood Industries.*

EARLE CLARK was promoted to public relations director, *Northern Natural Gas Co.*

EDWARD R. CURRY is the new South Central district manager for St. Paul Hydraulic Hoist division, *Gar Wood Industries.*

W. N. ESTEL was promoted to assistant general manager, *Dowell, Inc.*

WILLIAM M. FINE has been appointed manager of the Milwaukee branch office of *Worthington Corp.*

WALTER B. FISK, JR., has been named system engineer, *Consolidated Edison Co. of New York.*

PAUL J. FOLEY is the new manager of the Kansas City office of *Worthington Corp.*

RAY HARRISON was elected vice president, *Northern Natural Gas Co.*

DONALD S. KENNEDY has been advanced to general superintendent, Westchester county operations department, *Consolidated Edison Co. of New York.*

W. H. MANSFIELD has been promoted to purchasing agent, *Perfection Stove Co.*

OTTO W. MANZ, JR., was elected assistant vice president, construction, *Consolidated Edison Co. of New York.*

J. ELIOT MCCORMACK is now in charge of outside plant construction, *Consolidated Edison Co. of New York.*

ROBERT F. MONTGOMERY has joined *Drake & Townsend, Inc.*, as field supervisor.

DANIEL J. NADOLSKI has been transferred to the Birmingham, Ala., sales office, as manager for *The Trane Co.*

HARRY C. OTTEN is the new manager of system operations department, *Consolidated Edison Co. of New York.*

MARVIN M. RAMER has been promoted to contract manager, Southwest chemical plants division, *Blaw-Knox Co.*

THEODORE D. REIMERS, JR., was advanced to plant engineer, *Consolidated Edison Co. of New York.*

ROBERT E. SCHILL has been advanced to assistant manager, economic research department, *Brooklyn Union Gas Co.*

DONALD L. SEDGWICK was promoted to head the sales department, *Northern Natural Gas Co.*

FREDERICK C. SHAUGHNESSY is now manager of the distribution-operation department, *Consolidated Edison Co. of New York.*

R. D. SHAW has been named director of sales, *Dowell, Inc.*

W. LAWRENCE SHOMAKER, vice president, sales, *Northern Natural Gas Co.*, had his responsibilities broadened to include public relations.

P. T. SKOVE has been elected secretary-treasurer, *Perfection Stove Co.*

E. C. M. STAHL is now assistant to vice president in charge of production and operation, *Consolidated Edison Co. of New York.*

MARSHALL STIRLING is the new general sales manager of *Dowell, Inc.*

M. LECOMPTE WARING, assistant vice president, has been assigned to Westchester county operations for *Consolidated Edison Co. of New York.*

Peoples Names Ingham Geologist

Albert I. Ingham

Albert I. Ingham has been appointed chief geologist for The Peoples Natural Gas Company, Pittsburgh.

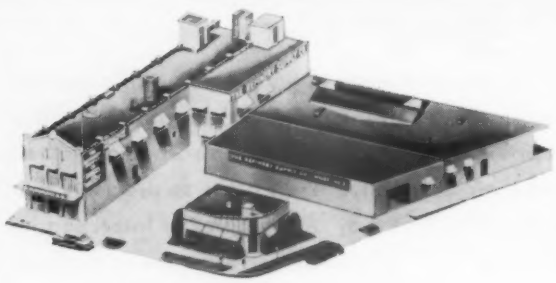
Prior to joining Peoples in September, 1951, Ingham was geologist in charge of southwestern Pennsylvania for the Pennsylvania Geological Survey, and was previously associated with Shell Oil Company as a geologist in Texas, Louisiana and Florida.

Mr. Ingham is the author of a number of oil and gas geological reports published by Pennsylvania Geological Survey.

Refinery Supply Advances Two Men

J. B. Okeson has been advanced by The Refinery Supply Company, Tulsa, to the position of vice president in charge of sales. At the same time, the company advanced T. C. Williams to the position of vice president in charge of operations. Both men have been with the company for more than twenty-five years.

J. B. Okeson



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Scientific Instruments
Manufacturers of
Ac-Me and R. S. Specialties

Ac-Me Recording Gravitometer
Ac-Me Specific Gravity Gas Balance
Ac-Me Pressure Vacuum Pump
R. S. Portable Vacuum Pump
R. S. Mercury Cleaner
R. S. Manometer
R. S. Dead Weight Gauge
R. S. Dead Weight Tester
R. S. Orifice Well Tester
R. S. Moisture Tester

R. S. Flat Bore Yel-O-Bak Thermometers
R. S. Streamlined Hydrometers
R. S. Pulsameter
R. S. Pressure Hydrometer Jars
R. S. Vapor Pressure Bomb
R. S. Diamond Core Drill
R. S. Thermo Plumb Bob Thermometers
R. S. Thermostat Temperature Controls
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621-23 E. 4th St. Tulsa 3, Oklahoma

NEW EQUIPMENT

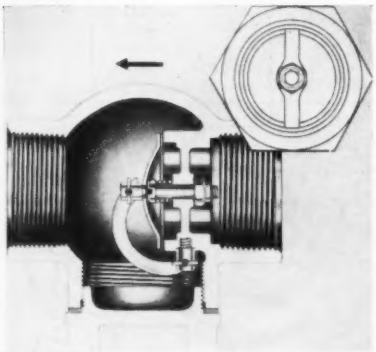
Cleaning gas meter exteriors

A new method of removing grease, oil stains and other dirt from the exteriors of household and other gas meters, prior to dismantling and rebuilding, has been announced. A dip-cleaning machine augments the chemical action of a cleaning solution by up-and-down movement at the rate of fifty times a minute. The solution, a mildly alkaline cleaner with added wetting action, is made up in water, two ounces per gallon; charged into the machine and heated to 120°F. Five to eight meters are loaded in the work basket for a two-minute cleaning action. They are then placed in warm water rinse tank and moved to the dismantling station. Intake and exhaust openings are capped during this cleaning operation. The solution has a softening effect on the exterior meter paint. The paint rehardens, it is said, by the time the meters reach the repair station. Where removal of paint is desired, a suitable paint stripper can be used in the machine.

Magnus Aja-Dip Cleaning Machine, Magnus 1DX Cleaning Solution. Magnus Chemical Co., Garwood, N. J.

Back pressure check valve

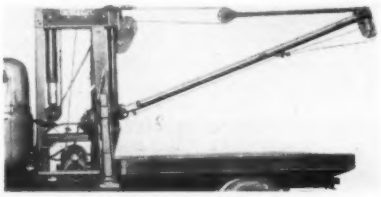
A patented horizontal, non-sticking, disc-type, back-pressure check valve for gas lines has been placed in new production. The valve permits unrestricted gas flow at negligible pressure drop with the light weight disc in full open position, at pressures as low as 1" wc. If air back-pressure should exist on pre-mixed air and gas systems, the manufacturer claims the valve will close and prevent air from entering low pressure gas distributing lines. A spring-tensioned push-rod holds the aluminum disc slightly off the valve seat except in case of reverse flow. Gas flow to maintain pilots is said to be assured; the possibility of the disc sticking to the valve seat is minimized. The valve can be supplied with either aluminum or stainless steel discs, depending on back-pressure requirements to 125 psi. All parts are accessible for inspection and cleaning without removing the valve from the line.



The Callahan Valve. Henry Flow Control Co., Melrose Park, Ill.

Hydraulically-powered crane boom

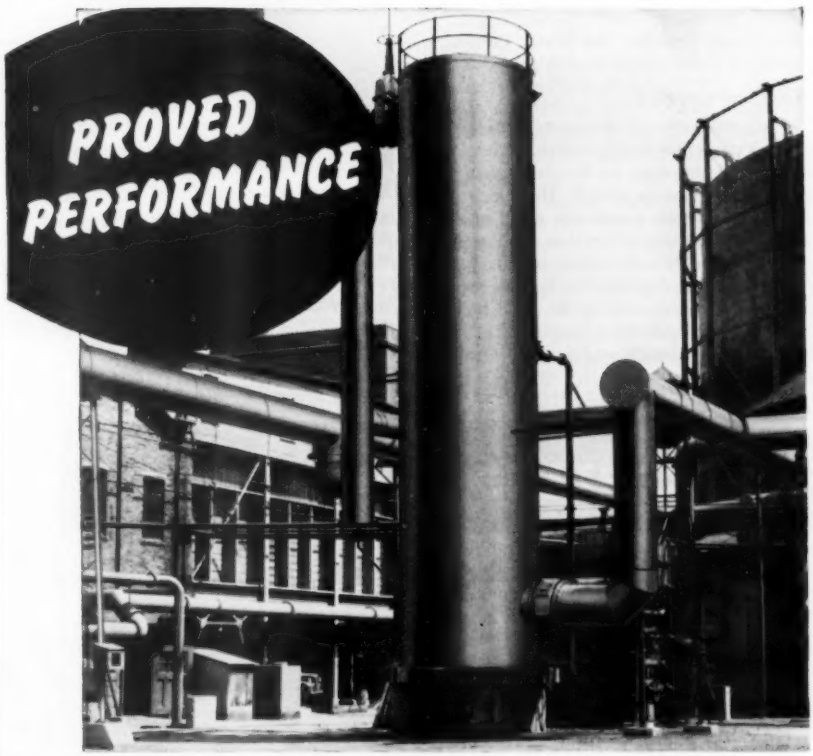
A recently-developed crane with hydraulically-powered boom that can be mounted on the frame of any truck, 1½ tons or larger, has been placed in production. According to the manufacturer, the new crane requires 40" behind the cab of a truck, has a loadline capacity of 6,400 pounds and a swinging boom which telescopes from 12 to 22 feet. Improvements in the new model are (1) an increase in the unit's safety margin and (2) it is shipped almost completely pre-assembled, cutting the time and cost of installation. The crane was especially designed for unloading, loading, stringing and laying pipe. Mounted on a truck fitted with a bolster and pipe trailer, a long wheelbase truck or a tractor-trailer unit, the crane can load to the truck on which it is mounted, then travel to the job. It also sets heavy valves and serves as a winch. In addition, the unit has uses in a pipe yard, handling valves, fittings, and meters.



Hydra-Lift. Pitman Mfg. Co., Kansas City, Mo.

Pipe polishing wheel

A unique, air-inflated polishing wheel is said to polish pipe ends preparatory to joining with increased speed, convenience and



Gasmaco Cooling Scrubbers

"Washer Coolers" of multiple Spray Design . . . with cooling coils or heat exchangers . . . have these advantages . . .

- √ Low Cost
- √ Better Heat Transfer Efficiency
- √ Maximum Capacity
- √ Minimum Pressure Loss
- √ Low Maintenance

Consult us regarding actual performance data on Gasmaco Scrubbers. We can assist in your requirements.

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Designers • Fabricators • Erectors
Gas Plant Equipment and Industrial Furnaces
THE GAS MACHINERY CO. (Canada) Ltd
HAMILTON, ONTARIO

safety, and will not undercut or grind flats. The wheel consists of a rubber drum 5" in diameter with a 3½" surface. The drum is mounted on a flange with either a ½" or ⅝" arbor. The operator slips an abrasive belt over the drum and then inflates the drum with from three to ten lbs. of air. Five to six lbs. is said to be about right for polishing pipe ends. The manufacturer claims that the wheel can be used with any kind of power tool for any type of polishing job. Belt changing is convenient. The resiliency of the wheel permits greater abrasive contact area, eliminates chatter and bounce, enables the wheel to polish contours more efficiently and safely. Users claim abrasive belt life lengthened.

Nu-Matic Grinder. Nu-Matic Grinders, Inc., 8224 Carnegie Ave., Cleveland 3, O.

Protective coating

Three new types of neoprene liquid coating for maintenance purposes have been introduced. They can be brushed, sprayed, dipped, trowelled or rolled. These coatings are said to provide a uniform sheet of neoprene, with lasting protection against corrosion, chemicals and water, and they will not chip, crack or peel. One type is an all-purpose air-drying coating for applications against high temperature, steam, acid fumes and splashes, solvents and general wear. It is oil- and grease-resistant, resilient and non-porous. It may be used on metal, concrete or wood and is available in black, gray or red. Another coating is designed primarily for equipment protection such as heavy immersion service on valves, pumps, pipes, impellers and tanks. It may be applied to metal, wood or concrete. It is said to be chemically stable and resistant to most acids.

Mercer-Proco Liquid Neoprene Coating —All-purpose, N-700; Skidproof, N-600; Equipment-protection, N-200. Mercer Rubber Corp., 64 Reade St., New York 7, N. Y.

Indoor gas service regulator

A new gas service regulator for indoor installation has been announced. It is said to be especially adaptable to the colder areas. Piping connects to the casing of the regulator for venting and relief valve discharge outdoors. Separate vents are provided for relief and breathing as protection against ice and insects. An outside weatherproof and bugproof breather vent has been developed for use with this regulator. A new principle in regulator construction has been incorporated, the manufacturer states, with an auxiliary passageway in the stem guide piece carrying the pitot tube. With a cross sec-

(Continued on page 33)

Training for Meter Work Viewed as Economic Matter

(Continued from page 25)

18. Heavy repair.

After he has acquired proficiency in the above operations the employee is instructed in so-called heavy repair work. This includes completely dismantling the meter, removing and installing new diaphragms, and assembling and soldering a new case.

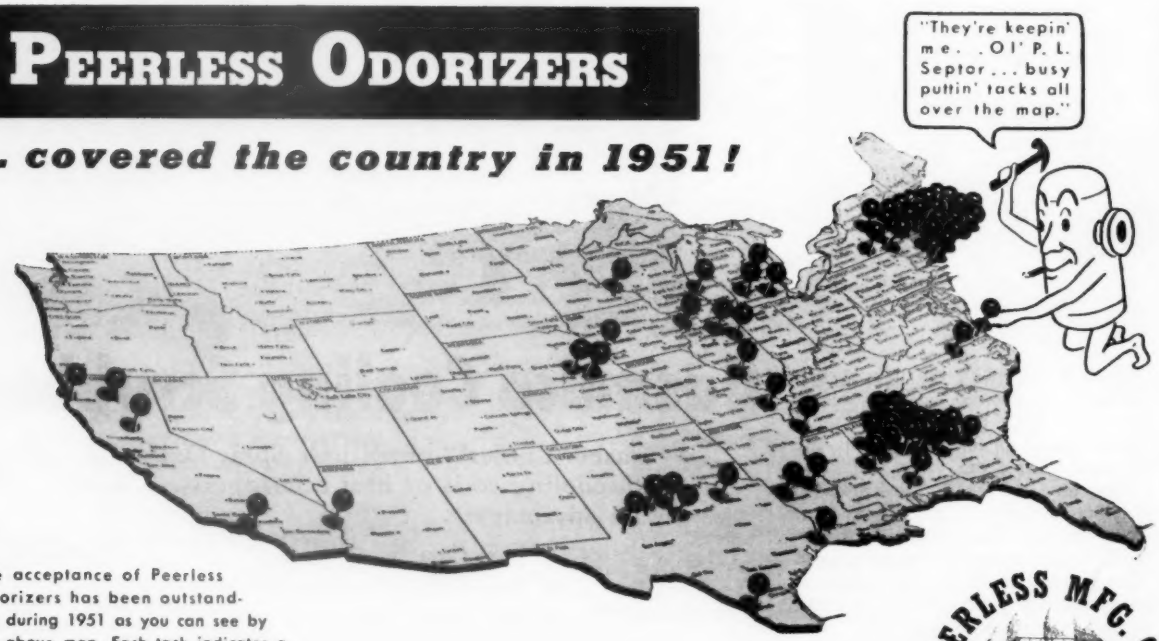
In all of our training an attempt is made not only to teach the job to the employee, but to point out the relation of his particular station to the functioning of the meter shop as a whole. Emphasis is laid on quality of workmanship first, with a later increase in production.

There are other factors

Many other factors of a general nature are involved in job training, both during the training of a new employee and after he has become a first-class repairman. Training and learning should never cease. Providing good working conditions and incentives for good work and keeping the employee satisfied with his job is the duty of supervision. There are many individual problems which arise daily that can affect our happiness and, unless they are corrected, both employee and company suffer alike. It is also the duty of supervisory personnel to listen to all such problems with an attentive ear, and to aid, guide, and instruct whenever possible.

PEERLESS ODORIZERS

. . . covered the country in 1951!



The acceptance of Peerless Odorizers has been outstanding during 1951 as you can see by the above map. Each tack indicates a Peerless Odorizer installation. Gas Companies are finding Peerless Odorizers accurate for metering odorant into natural gas lines. Operational costs are reduced to a minimum.

PEERLESS MFG. CO.

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REPRESENTATIVES IN ALL PRINCIPAL CITIES

New Equipment

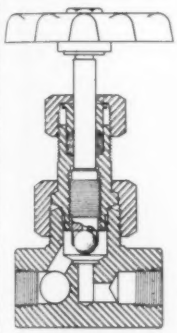
(Continued from page 32)

tion of approximately fifteen times that of the pitot tube, the passageway is kept closed in normal operation but is capable of opening instantly for emergency relief valve discharge. A doughnut-shaped check valve disc closes on a flat, raised seat at the left end of the stem guide piece, the disc hole making a sliding fit over the guide bushing. The disc is pliable enough to adjust itself to the check valve seat surface. The check valve action prevents "choking" in the vent connections. A variety of vent connections, welded to the spring case, is available.

Universal Series 51-R Regulator. Universal Controls Corp., Dallas, Tex.

Ball valve

A new ¼-inch ball valve of unique construction, recommended by the manufacturer for working pressures up to 3,000 psi, has been announced. Tight, positive shutoff is provided by a stainless steel ball which closes into a machined, conical seat. The ball, retained at the end of the stem, is free-rolling so that every closing brings a new surface into contact with the valve seat. Alignment of ball to seat is accurately piloted by a forged steel, union-type bonnet, fitting tightly to the body and assuring a correct valve closure. The long-stroke stem and the packing gland are made of stainless steel for durability and resistance to corrosion. The packing is a preformed, graphited asbestos with a plastic binder and can be replaced without shutting off the line pressure or interrupting the process. Straight-through and angle types are available with two and four connections. Applications include meter manifolds, gauge lines, seal chambers, bleed-off and sampling connections. The valve is for liquid, gas and steam service.



Foxboro Ball Valve. The Foxboro Co., Foxboro, Mass.

NEW BULLETINS

PRESSURE PILOT. A new non-indicating pressure controller is described in this bulletin with the principle of operation, instrument versatility, design features, specifications and dimensions. Fine clarity has been placed in the illustrations; information is adequate for selection. *Bulletin 16-1.* 8 pp. Station 40, Minneapolis-Honeywell Regulator Company, Philadelphia 44.

ROL-AIR FLARING TOOL. This leaflet describes a flaring tool that provides automatic burnishing action and, also, describes fully the operation, sizes, and prices. [See AMERICAN GAS JOURNAL, May, p. 45.] The leaflet gives information about a tube cutter designed for sizes from ¾" to 2¼". *Bulletin 3003.* 2 pp. The Imperial Brass Manufacturing Co., 1200 W. Harrison St., Chicago 7.

BAILEY ARMORTUBE. This flexible, protected, tube cable and fittings for pneumatic and hydraulic circuits is described fully in a well illustrated bulletin. This tubing, which follows the principle of the BX cable, is clearly specified as to size and weights. [See AMERICAN GAS JOURNAL, May, p. 43.] *Bulletin BA-927.* 4 pp. Bailey Meter Company, 1050 Ivanhoe Road, Cleveland 10.

JOHNSONSITE PLASTIC PIPE. An extruded cellulose-acetate-butyrate plastic pipe, available in rigid form, is described in this bulletin. Operation in gas service is mentioned, though the bulletin is intended primarily for the petroleum industry. *Bulletin 352.* 4 pp. Johnson Plastic Corporation, Chagrin Falls, O.

PLIBRICO REFRACTORY PRODUCTS. Three grades of jointless fire brick are described and illustrated in this bulletin. The brick is intended for operation in temperatures as high as 3,330° F. The brick has the consistency of stiff putty and is placed in position as brick and then pounded with a hammer to join one brick to another. Each layer is pounded before adding additional material, but no masonry work is involved. After installation and trimming to a smooth surface, it is fired to become a monolithic mass which retains its shape and position. *Bulletin 11.* 6 pp. Plibrico Jointless Firebrick Co., Firebrick, O.

SERVICE REGULATORS. The regulators described in this bulletin are designed and built for domestic gas service, and will operate under high or low pressure on manufactured or natural gas. They will reduce 100 psi or less inlet pressure to uniform outlet pressure of as low as 3" wc. Complete sectional illustrations with performance curves, parts lists, installation information, and selection tables are included. *Bulletin 1026-1.* 16 pp. Rockwell Manufacturing Co., Pittsburgh 8, Pa.

DIRECT-FIRED FURNACES. Briefly described in this bulletin are the direct-fired production heat treating furnaces of this company. The bulletin includes illustrations of gas-fired equipment for continuous annealing, hardening, normalizing, reheating, and wire patenting. Bulletin SC-156. 4 pp. Surface Combustion Corp., Toledo 1, O.

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NEW BOOKS

THE MAKING, SHAPING AND TREATING OF STEEL. A complete revision based on the original text by J. M. Camp and C. B. Francis. Sixth edition.

With the growing interdependence of the gas and steel industries, this exhaustive book on steel should have high value to the gas industry with respect to the utilization of gas in the making of steel and the data on steel characteristics that would be useful in selection of materials for gas industry projects.

Long regarded as the centralized reference work from which authoritative steel information could be obtained with complete confidence, the sixth edition reflects the technological changes that have been made in the steel industry since the fifth edition was issued in 1940.

The thirty-eight chapters cover the scope indicated by the title and, in addition, subjects of gas industry interest such as protective coatings, steels for elevated temperature service, testing and fuels.

The book is fully illustrated with photographs, work flow diagrams, charts and tables. An index of 147 pages facilitates locating specific references.

Pp. 1,584 + xvi. United States Steel Co., Pittsburgh, Pa. $7.50.

AMERICAN PIPE LINES. Their Industrial Structure, Economic Status and Legal Implications. By George S. Wolbert, Jr.

The interests of lawyers, economists and regulatory agencies are served with greatest emphasis in this new volume. It opens with a report on the historical, economic and technical development of pipelines, with specific discussion relating to rate and service requirements. In the second part, the author surveys existing legal and administrative remedies designed to cope with the problems of pipeline planning, routing, service and operation. The handling of pipeline

Results Given for Tests on Reformed Propane from Catalytic Generator

A NUMBER of analyses of the reformed propane obtained from test runs of the gas generator described in the article, "New Type of Catalytic Gas Generator Incorporates Economic Features," by Virgil Stark, president, North American Utility and Construction Corporation, page 15 of the June issue of AMERICAN GAS JOURNAL, have been made available to show the results obtained under varying conditions of temperature, Btu content and specific gravity. The analyses are given below in a table prepared by the author of the article.

SAMPLES OF REFORMED PROPANE FROM TEST RUNS
CONCENTRIC CATALYTIC GENERATOR, CLAREMONT, N. H.
(New York Testing Laboratories)

PERCENTAGE ANALYSIS

Sample	A	B	C	D	E	F
Carbon dioxide	10.0	8.88	7.20	4.5	8.1	4.7
Unsaturates	1.1	0.93	2.30	2.1	0.0	0.4
Oxygen	1.8	3.85	1.30	0.6	0.3	0.5
Carbon monoxide	12.6	8.98	16.50	17.5	13.3	16.7
Methane	6.0	nil	5.61	7.4	8.7	7.4
Hydrogen	66.0	67.40	61.55	62.6	56.6	51.4
Balance (nitrogen)	2.5	9.96	5.54	5.4	13.0	12.9
Free carbon	none	none	none	none	none	none

TEMPERATURE READINGS (°F)

Pyrometer T3 (outlet, catalyst ring)	1380	1400	1360	1460	1680	1670
Pyrometer T2 (middle ring)	1210	1260	1200	1080	1490	1480
Pyrometer T1 (inner ring)	940	960	970	680	760	810
Heat content (Btu/cf)	327	257	341	362	309	256
Specific gravity (air = 1)	0.41	0.41	0.43	0.40	0.47	0.45

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matters by Interstate Commerce Commission are examined.

Pp. 179 + xii. University of Oklahoma Press, Norman, Okla. $3.50.

HOW TO CONVERT TO LP-GAS CARBURETION. Operation and Maintenance. By T. E. Wisby.

As its title indicates, this book is devoted to LP gas operation of internal combustion engines. The author, director of training in The National LP-Gas Institute, says that the book is "the product of the combined experiences of the instructional staff" of the institute.

The content of the book is indicated by the chapter titles, which include ignition, cooling, lubrication, parts and functions of LP gas carburetion system, conversion problems, testing methods and devices, safety regulations, typical installations of vapor systems, typical installations of liquid systems, cost and service data.

Pp. 433 + xii. Illustrations and tables. Ross-Martin Company, Tulsa 1, Okla. $10.00.

PETROLEUM CONSERVATION. Edited by Stuart E. Buckley.

Oil and gas reserves and production, largely commingled, are viewed realistically by a group of experts in this volume which is intended as a story, a text and a reference.

Conservation of oil and gas is presented, not as a matter of either hoarding or nonuse, but as a matter for technical consideration that has a practical solution, in the interest of the best economics for natural resources and, at the same time, in the interest of the landowner and producer.

The editor and contributors guide the reader through the intricacies of oil and gas behavior in natural underground reservoirs. Chapters deal with the elements of conservation, the resources, reservoir characteristics, efficient operation of reservoirs, secondary recovery, pressure maintenance, and the relationship between conservation and state regulation.

Pp. 304 + xx. 16 charts. American Institute of Mining and Metallurgical Engineers, Dallas 1, Tex. $6.00, postpaid.

New Publication

HIGH GRADIENT. This new digest-form publication, principally for "executives and engineers who have processing responsibilities," presents brief articles pertaining to the advances in industrial processing methods and equipment, specifically those of the "publisher." The first issue, June, includes notes on the utilization of gas and gas equipment in the production of cast steel military tank hulls, processing of nonpetroleum hydrocarbons, steel tubing, the manufacture of electrical equipment, and brazing. One article is based upon a 466 per cent "jump in production speed and a vastly improved quality" in textile processing. Other articles are on glass production and high-speed polymerization of enamels on lipstick cases. Gas industry executives and industrial gas engineers may receive this publication, which will be issued six times each year, by requesting it from *Selas Corporation of America, Philadelphia 34.*

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GAS INDUSTRY CALENDAR

July

18 AGA executive board, Headquarters.

September

7-9 Wisconsin Utilities Assn. management conference, King's Gateway Hotel, Land O'Lakes, Wis.

11-12 Mid-West Gas Assn., school and conference, Iowa State College, Ames, Ia.

12 New Jersey Gas Assn., annual meeting, Atlantic City.

October

1-3 Wisconsin Utilities Assn., technical and sales convention, Schroeder Hotel, Milwaukee.

7-9 Pacific Coast restaurant convention and exposition, Biltmore Hotel, Los Angeles.

20-24 National Metals Exposition, Philadelphia.

27-30 AGA annual convention, Atlantic City.

27-31 GAMA exposition, Atlantic City.

28 AGA executive board, Atlantic City.

30 LPGA northeastern annual meeting, Ambassador Hotel, Atlantic City.

November

20-21 Mid-Southeastern Gas Assn., Sir Walter Hotel, Raleigh, N. C.

20-22 South. California Meter Assoc., instrument maintenance course, Los Angeles Harbor Jr. College

March, 1953

26-27 NEGA, Hotel Statler, Boston.

27-29 Mid-West regional gas sales conference, Edgewater Beach Hotel, Chicago.

30-Apr. 1 Mid-West Gas Assn., Broadmoor Hotel, Colorado Springs, Colo.

April, 1953

12-16 AGA distribution, motor vehicles and corrosion conference, Hotel Sherman, Chicago.

21-23 Southwestern measurement course, University of Oklahoma, Norman.

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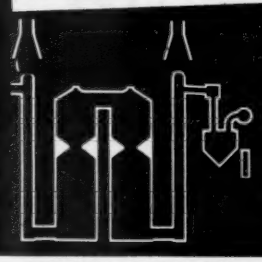

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